PC TOOLS

IBM
VERSION

DESKTOP MANAGER

VERSION
5.5

Central Point Software INC
A MEMBER OF THE VIDEO TECHNOLOGY GROUP

PC Tools Desktop

Version 5.5

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Introduction

PC Tools Desktop™ is a complete desktop organizer with full keyboard or mouse support, pull-down menus with moveable and resizeable windows, and full color control. Desktop uses about 40K of memory and can be run as a memory-resident application, enabling the Desktop applications to be available at all times, or as a standard DOS application; the choice is yours.

PC Tools Desktop provides you with the following features:

- an intuitive and easy-to-learn user interface
- on-line help for quick answers and guidance
- full mouse and keyboard support
- memory-resident or standard DOS program, whichever you prefer

Your distribution disk contains several example files (called SAMPLE) to accompany the manual's explanation.

PC Tools Desktop contains the following nine applications:

Notepads	A word processor that can move blocks of text, globally search and replace, check spelling, and read standard ASCII text and WordStar files.
Outlines	Helps you to organize your thoughts in outline form with full editing capability. You can collapse and expand headings and indent for multiple levels.
Databases	Organizes and manages information with multiple sorting capabilities, uses dBASE compatible data files, and includes an automatic phone dialer.

Appointment Scheduler	Creates appointment schedules and to-do lists. You can display a day or a week's schedule, check for conflicts, and set alarms to remind you. Alarms can optionally run a macro to do such things as pop up a notepad with meeting notes, pull up a database record and dial a phone number, run a telecommunications script to transfer a file, or run a program at night (such as PC Tools Compress, which will unfragment your hard disk when you are not there).
Telecommunications	Sends and receives data and program files. It can work in the background so you can transfer files while you continue to work.
Macro editor	Allows you to record and save commonly used keystroke sequences that you can replace with a single keypress.
Clipboard	Temporary storage space for copying and pasting text within PC Tools Desktop or other applications.
Calculators	Includes algebraic, financial, scientific, and programmer's calculators.
Utilities	Lets you select your PC Tools Desktop hotkeys, display an ASCII character table with IBM graphics characters, change system colors, and unload PC Tools Desktop from memory.
Autodialer	Enables you to dial a phone number appearing on the screen inside or outside of PC Tools Desktop.

If you purchased PC Tools Deluxe from a dealer or mail order company, please take a moment now to fill out and send in the registration card. If you purchased PC Tools Deluxe directly from Central Point Software, you are already registered as an owner, so you don't need to return the registration card. Being a registered owner entitles you to technical support and lets us tell you about product updates. When PC Tools is updated, all registered owners can purchase the update at a greatly reduced price.

Technical Support

If you need technical support for PC Tools Deluxe, please call (503) 690-8080. Dial 1 then extension 5700 anytime after the automated attendant has answered; you do not need to listen for the message to be completed. Our business hours are Monday-Friday, 8-5 PST. Please read the Technical Support appendix and complete the Technical Support Checklist before placing your call.

About this Manual

The PC Tools Desktop manual has the following chapters:

- An Installation chapter for setting up your system.
- A Getting Started chapter which explains the user interface.
- A chapter for each Desktop application.
- An appendix explaining memory-resident programs.
- An appendix with Technical Support information.

Because not everyone will want or need to use all the Desktop applications, the chapters are arranged so that you can quickly get started using any application by turning to the appropriate chapter to learn how to open the application and use the commands. Commands are arranged in the order they appear on the menus, and highlighted letters are indicated in the manual as underlined letters.

Installation

Hardware Requirements

PC Tools Desktop is designed to work with the IBM® PS/2 (all models): PC, PCjr, XT, AT, and most IBM-compatible computers. Your computer should have at least 512K of memory. If you want to keep PC Tools Desktop "resident" in memory while other programs are running, it's a good idea to have 640K of memory. You need only one disk drive, although PC Tools Desktop can also work with multiple disk drives, and work better with either a hard disk or at least 320K of EMS memory.

To start up PC Tools Desktop, you need to boot your computer with version 3.0 (or higher) of DOS®. (We recommend that you use DOS 3.2 or higher.) Once PC Tools Desktop is running, it can work with disks formatted by any version of DOS.

Note: We have made a great effort to make PC Tools Desktop and PC Shell compatible with other resident programs. PC Tools Desktop is very "well-behaved" in its operation while some other resident programs are not. If you experience any problems with PC Tools Desktop and other resident programs, try changing the order in which your resident programs are loaded. (We'd also appreciate knowing which programs you had trouble with.) See the appendix entitled "Memory Resident Programs" for more information.

Mouse Users

PC Tools Deluxe is designed to perform optimally with a mouse. If you want to use a mouse, you must have its driver installed in your AUTOEXEC.BAT or your CONFIG.SYS file. See your mouse documentation for more information. If you are using a Microsoft mouse, then you should have version 6.14 or higher of the Microsoft Mouse driver. If you are using a Logitech/Dexxa mouse, you should have version 3.4x or higher of the mouse driver. Older mouse drivers may not work with all PC Tools Deluxe applications.

Installing to a Hard Disk

While PC Tools Desktop can be used on a floppy disk system, it really excels when you have a hard disk. **In fact, we highly recommend that you install PC Tools Desktop on your hard disk using PC Setup.**

PC Setup

The installation procedure in PC Setup assumes you are installing from drive A. If you want to install from a different drive, substitute that drive letter for drive A in the following procedure:

1. Insert disk number 1 in drive A.
   If you are at the C: prompt, type A:.
2. At the A> type: PCSETUP and press Enter.
3. Follow the instructions on the screen for installation.
4. Reboot the computer. You are now ready to begin using all of the PC Tools Desktop options.

PC Setup allows you to selectively install the various PC Tools Deluxe programs with the following four installation options:

1. Copy the PC Tools Deluxe files to your personal computer's hard disk.

   This option will copy the PC Tools Deluxe programs you request and give you the option of installing them by making modifications to your AUTOEXEC.BAT file.

2. Copy the PC Tools Deluxe files to a network server's hard disk.

   This option will copy the requested program files to a directory on a Novell NetWare or IBM Token-Ring network server. This should be done by a network supervisor since PC Setup will need write privileges to the directory where installation is done. Network supervisors should read the section "Running on a Network" later in this chapter.

3. Change the configuration of a previous installation.

   This option will allow you to modify the way the PC Tools programs are installed in your AUTOEXEC.BAT file. It will not copy any files.

The PC Setup program will copy PC Tools Desktop to a subdirectory on your hard disk. The default directory is PCTOOLS. It also adds a PATH statement so DOS can always find the PC Tools Desktop programs, and optionally installs PC Tools Desktop in your AUTOEXEC file so it is resident. Your original AUTOEXEC.BAT file is saved as AUTOEXEC.SAV in case you need to recover it.

Depending upon which programs you choose to install with PC Setup, the PC Tools programs are placed in the AUTOEXEC.BAT file after the last PATH statement in this order:

Mirror
PC-Cache
Background Telecommunications
PC Shell
Desktop

These programs must be installed in this order for them to function as described in the manual. If you plan to modify the AUTOEXEC.BAT file, make sure you do not change the loaded order of PC Tools programs. See the Memory Resident Programs Appendix for more information about suggested loading order.

If you have an earlier version of PC Tools in the subdirectory you want to copy the new version of PC Tools into, PC Setup will overwrite any files of the same name but ignore any files that are not included in version 5. For example, DESKTOP.EXE (the new program) will overwrite DESKTOP.EXE (the old program).

If for any reason you wish to change the setup options made by PC Setup, you can use any word processor to edit your AUTOEXEC.BAT file.

If you receive a DOS error message using PC Setup, it could mean your AUTOEXEC.BAT, CONFIG.SYS, FORMAT.COM, or FORMAT.EXE are read-only. Change the read-only attribute using the DOS ATTRIB command or an older version of PC Shell (if you have one installed) and then run PC Setup.

Note: If you have been using any other menuing or DOS shell programs prior to installing PC Tools Desktop, you might not see PC Tools Desktop as expected when you reboot. If this happens, you will need to remove these programs from your AUTOEXEC.BAT file.

Desktop Files

The following files found on your distribution disk are used by PC Tools Desktop. They are required to execute the program and should not be deleted.

DESKTOP.EXE	Main Desktop program
DESKTOP.HLP	Help file
ASCII.OVL	ASCII table utility
CALC.OVL	Algebraic Calculator
DBMS.OVL	Database Manager

FINCALC.OVL	Financial Calculator
SCICALC.OVL	Scientific Calculator
HEXCALC.OVL	Programmer's Calculator
HOTKEY.OVL	Hotkey utility
INKILL.OVL	Desktop removal utility
RECOLOR.OVL	Screen colors utility
SPELL.OVL	Spelling checker
TALK.OVL	Telecommunications
TIME.OVL	Appointment Scheduler
BACKTALK.EXE	Background communications
DICT.SPL	Spelling checker dictionary
DSKERR.DBF	System messages
KILL.EXE	Removes PC Tools resident programs
PHONE.TEL	Phone numbers directory

The following sample files have been supplied and, if you are short on disk space, can be deleted:

SAMPLE.DBF	Sample Database
SAMPLE.FOR	Sample database form
LETTER.FOR	Sample form letter form
SAMPLE.OUT	Sample Outline
SAMPLE.TXT	Sample Notepads
EPSON.PRO	Epson printer macros
HPLJF.PRO	HP LaserJet printer macros
PANA.PRO	Panasonic printer macros
PROPTR.PRO	IBM Proprinter macros
SAMPLE.PRO	Sample macros used in examples
CPS_BBS.SCR	Central Point Software Bulletin Board "log on" script
CSERVE.SCR	CompuServe "log on" script
CSMAIL.SCR	CompuServe mail "log on" script
ESL_FAX.SCR	Easylink FAX "log on" script
ESL_MAIL.SCR	Easylink mail "log on" script
MCI.SCR	MCI Mail "log on" script
PCMAG.SCR	PC Magazine (on CompuServe) "log on" script

In addition, the files listed below are NOT found on the distribution disk, but are created as needed by Desktop.

DESKTOP.CFG	Configuration file (saves colors and windows)
DESKTOP.IMG	Desktop video RAM temporary file (resident mode only)
DESKTOP.THM	Swapped memory area (resident mode only)
DESKTOP.OVL	Desktop overlay (resident mode only)
MACROS.OVL	Macro program
TALK.CFG	Telecommunications configuration

*. REC	Database record file (has same name as your database file)
LEARN.PRO	Macros created in Learn Mode
*.TM	Appointment schedules
TRANSFER.LOG	Captured transmission using background communications with the XMODEM protocol
CALC.TMP	Saves Algebraic Calculator tape computations
SCICALC.TMP	Saves the values stored in the Scientific Calculator registers

Running on a Network

IMPORTANT: You must purchase a copy of PC Tools Deluxe for every station on the network that has access to the PC Tools Deluxe programs or contact us to purchase a Network or Site license.

The PC Tools programs can be installed in a write-protected directory on a Novell NetWare or IBM Token-Ring network server. They can then be run from any station on the network which has access to the files on the server. You (or your network supervisor) will need to make sure that the PC Tools server directory is in your path. In addition, you will need to set an environment variable, "PCTOOLS", specifying where PC Tools should put all user-specific files (dictionary, color information, etc.). This needs to be a directory that is unique for each user and that the user has write privileges to. This environment variable is either added to the station's AUTOEXEC.BAT file or is done at the supervisor level on the network. If it is done in the station's AUTOEXEC.BAT file, it should look like this:

```
SET PCTOOLS = drive:\directory path
```

Where "drive:" is replaced with the drive letter and "\directory path" is replaced with the full path where PC Tools should place its user-specific files.

The first time that PC Tools Desktop is run, it will copy the following files from the server directory to the directory specified by the PCTOOLS environment variable:

DICT.SPL
DESKTOP.OVL
PHONE.TEL
CPS_BBS.SCR
CSERVE.SCR
CSMAIL.SCR
ESL_FAX.SCR
ESL_MAIL.SCR
MCI.SCR
PANA.PRO
EPSON.PRO
HPLJF.PRO
PROPTR.PRO
SAMPLE.PRO
SAMPLE.DBF
LETTER.FOR
SAMPLE.FOR
SAMPLE.OUT

PCMAG.SCR SAMPLE.TXT

Network Supervisors

If you are setting up PC Tools Desktop on a Novell NetWare network, you should make the PC Tools directory path available to all users, and also use a system login script to define the PCTOOLS environment variable for all users. For example:

```
SET PCTOOLS = h:\home\%login_name
```

where the directory below "home" has the same name as a user's login name and the user has full write privileges.

You can use PC Setup to install the PC Tools programs in a write-protected directory on a Novell NetWare or IBM Token-Ring network server. They can then be run from any station on the network which has access to the files on the server. When installing to a network, PC Setup will not make any modifications to an AUTOEXEC.BAT file or install any applications, other than the requested PC Tools applications, into PC Shell's application list.

If PC Tools is installed on a Novell NetWare server by a supervisor and if the supervisor sets up the path and environment variable for all users, PC Setup does not need to be run by each station user.

Getting Started

This chapter is an overview of the PC Tools Desktop interface. It is recommended that you read this chapter thoroughly before continuing. Although the applications contained in your PC Tools Desktop package perform very different tasks, they have the same user interface and window environment to make them easy to learn and use.

To use PC Tools Desktop, it is assumed you are familiar with MS-DOS® or IBM PC-DOS, and know about files, file names, and extensions, and how to use the common DOS commands. You need to know how to boot DOS (answer the date and time questions if necessary) to get the DOS prompt (A> or C>). If you need to know more about these, please refer to your Disk Operating System manual.

Starting PC Tools Desktop

The following example assumes that you are in the PCTOOLS directory (where PC Tools Desktop is installed) or that you have the PCTOOLS directory in your path statement in your AUTOEXEC.BAT file.

If you've installed PC Tools Desktop using PC Setup, then it is already in memory and ready for you to use by pressing the Ctrl and Spacebar keys together. This is the standard PC Tools Desktop hotkey. (Hereafter, when you need to press keys together, you'll see Key - Key.)

If you haven't installed PC Tools Desktop using PC Setup, you have the option of running it as a standard (or stand alone) DOS application or as a memory-resident application.

Important: You can choose **either** memory-resident mode or stand-alone mode, but you cannot start PC Tools Desktop as a stand-alone application once it has been installed memory resident.

To Start PC Tools Desktop as a Stand-Alone Application:

Using PC Tools Desktop as a stand-alone application gives you the advantage of not tying up any system memory when you're not using it. If you want to run PC Tools Desktop as a standard DOS application, type the following at the DOS prompt:

```
DESKTOP
```

This starts the standard DOS version.

To Start PC Tools Desktop as a Memory-Resident Application:

Running PC Tools Desktop as a memory-resident application has the following advantages:

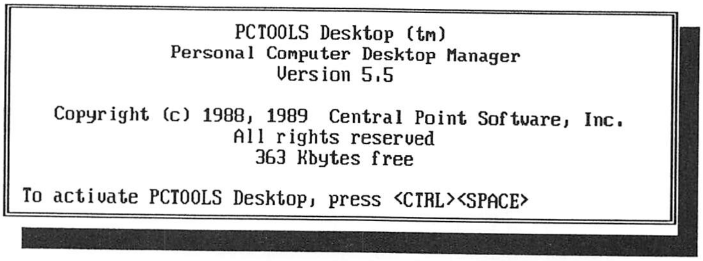
- You have access to macros anywhere you are working.
- You can use alarms in the Appointment Scheduler.
- You can hotkey in and out of PC Tools Desktop while running any other application.
- You can use the Clipboard to copy and paste text into other applications.

Type the following at the DOS prompt:

```
DESKTOP /R
```

This starts the memory-resident version.

Wait a moment for PC Tools Desktop to load into memory, then the following is displayed on your screen:



```
                      PCTOOLS Desktop (tm)
               Personal Computer Desktop Manager
                          Version 5.5

     Copyright (c) 1988, 1989  Central Point Software, Inc.
                      All rights reserved
                        363 Kbytes free

 To activate PCTOOLS Desktop, press <CTRL><SPACE>
```

Press the Ctrl - Spacebar hotkey to start PC Tools Desktop.

Hotkey: The term "hotkey" is used when calling up a memory-resident program or function. You may press the default hotkey (Ctrl - Spacebar) to activate PC Tools Desktop at any time, once it is loaded as a memory-resident program. The hotkeys in PC Tools Desktop are user definable, so you may choose other hotkeys to activate PC Tools Desktop. The procedure to change the hotkey selection is discussed in detail in the Utilities chapter.

Note: You do not have to exit all your Desktop applications prior to hotkeying back to DOS. The Desktop hotkey is always active. If you hotkey out to DOS, then hotkey back into Desktop, all your windows are loaded just the way you left them.

Memory Resident: Running PC Tools Desktop memory resident will allow you to bring it up from within other programs. For example, if you were working in your spreadsheet application and wanted to write a note in Notepads, you could hotkey into PC Tools Desktop, choose Notepads, write the note, and continue where you left off, back in the spreadsheet.

Expanded Memory: When you hotkey into PC Tools Desktop, it will automatically load the DESKTOP.THM overlay file into expanded memory (LIM compatible), if available, to hold the image of the underlying application. If expanded memory is insufficient or non-existent, then the image file (or the portion that won't fit in expanded memory) is placed in the DESKTOP.THM file on disk. The EMS memory is freed when you hotkey out of Desktop. The other Desktop overlay files do not use expanded memory because these files are permanently allocated when Desktop is installed and would require permanent use of expanded memory. You must have your expanded memory driver installed in your CONFIG.SYS file before loading PC Tools Desktop. PC Tools Desktop will only use as much expanded memory as it needs and will free up as much as possible when not in use.

When you execute PC Tools Desktop, it looks for its files in the following order:

- If you are using DOS 3.0 or higher, it looks in the directory from which PC Tools Desktop was executed; then
- it scans the directories in the path statement. If not found
- it looks in the PCTOOLS subdirectory. If not found
- it looks in the root directory.

To Remove PC Tools Desktop from Memory:

Once PC Tools Desktop has been run as a memory-resident application, it can be removed from memory with the following command:

```
KILL
```

This command also removes PC Shell (plus BACKTALK) from memory if they were the last memory-resident programs you loaded.

Desktop Parameters

The following parameters are available when starting PC Tools Desktop. These parameters are optionally added to the command line at the DOS prompt when executing PC Tools Desktop.

- **/BW** Produces a better screen display when using a color card with a monochrome monitor. /BW can be used in either stand alone or resident mode to improve its appearance.

- **/CS** Clears the screen and displays a background pattern when PC Tools Desktop is running in memory-resident mode. When PC Tools is running as a stand-alone application, the background automatically comes up.

- **/C3 or /C4 = IRQ,Base port address** Tells the Autodialer and the Telecommunications program which serial port your modem is connected to. Since COM 3 and COM4 are not standard, they must be defined on the command line with a parameter: /C3 or /C4 = IRQ,Base port address (for example, /C3=4,3E8). Refer to your modem manual for the IRQ and Base port address. This parameter is not necessary on PS/2's.

- **/DQ** When Desktop is hotkeyed into, it must save the memory being used by the currently running program in a disk file before it can load its program file into memory. This naturally takes time. To make Desktop load faster, it will not save memory when it is hotkeyed into from the DOS prompt because there is no program running.

  If you experience any problems when you hotkey into Desktop from the DOS prompt, use the /DQ parameter when you install Desktop to disable the quickload capability at the DOS prompt.

- **/IN** If you have a Hercules InColor card and want to run Desktop resident and in color, use the /IN parameter. Using the Hercules InColor card with resident programs often causes screen color conflicts. If you do not use the /IN parameter, Desktop will come up in black and white mode. When running Desktop in non-resident mode with an InColor card, Desktop will come up with its normal colors.

- /IM Disables the mouse when using PC Tools Desktop. Use this parameter if you have an old Microsoft Mouse driver or are experiencing problems with a mouse supported application, after hotkeying out of PC Tools Desktop. Due to a lack of support in some older mouse drivers, memory-resident programs may have no way of knowing how the mouse driver was set up for a previous application. Hotkeying into and then out of PC Tools Desktop may cause the loss of mouse support in the current application. By using the /IM parameter, the mouse will be disabled in PC Tools Desktop, but keyboard functions will continue to operate normally. The mouse will not be affected in your underlying program.

  Note: If you have problems with the mouse after entering Desktop, it is most likely due to using an older-style driver. You can use the /IM parameter, but we recommend that you contact your mouse manufacturer to get an upgrade.

- /LE Exchanges the left and right mouse button functions to accommodate left-handed people.

- /Od Selects a different drive to contain the PC Tools Desktop overlay files. Normally, PC Tools Desktop will use the default drive to build its overlay files (DESKTOP.OVL, DESKTOP.IMG and DESKTOP.THM). This can be changed by using the /O parameters, which forces Desktop to place its overlay files on the drive specified in the /O parameter, for example, a RAM disk. Building the overlay files on a RAM disk may help speed up program execution. This parameter may also be used to disable the use of expanded memory for overlay files by explicitly directing the overlay files to another device. If you are directing the Desktop files to a RAM disk, you need to have at least 400 kilobytes of memory. If you plan to direct both Desktop and Shell to a RAM disk, you need minimum of 1000 kilobytes of memory.

  There must be enough space available on the RAM disk to hold the overlay files. If there is not enough space, the default drive will be used.

- /350 Displays in 350 line resolution if you have a VGA display. This will make the background screen and the scroll bars in Desktop continuous, but it may have the effect of reducing the size of the screen on some VGA adapters. This parameter also works with PC Shell.

- **/RA** By installing Desktop with the /RA parameter instead of /R, Desktop will come up as if you had hotkeyed into it, and the Appointment Scheduler will display today's schedule and To-Do list. At this point Desktop is fully functional. If you do not have an active Appointment Schedule file with appointments set, Desktop will come up as if you had installed it with the /R parameter.

  Note: If you have Desktop installed in your AUTOEXEC.BAT file using this parameter, it should be the last entry in the file because everything that follows it will not be executed until Desktop is exited.

Desktop Short Cut Keys

The F1 (Help), F2 (Help Index), F3 (Escape), and F9 (Switch the active window) keys are globally available in PC Tools Desktop applications. In addition, the F4, F5, F6, F7, and F8 keys are defined to provide short cuts in each Desktop application. When highlighted short cut keys (in red on color monitors) appear on the bottom line, the associated commands can be invoked by pressing the highlighted function key or positioning the mouse cursor on any portion of the command or highlighted key and clicking the mouse. For example, to save your document in Notepads just press F5 or click anyplace on "F5=SAVE" with the mouse; this brings up the Save dialog box.

Using the Mouse

PC Tools Desktop fully supports and can be used with either your keyboard or a Microsoft® (or compatible) Mouse.

The pull-down menu approach to choosing and executing commands, along with the overlapping window approach for displaying an application's information makes using Desktop much easier with a mouse.

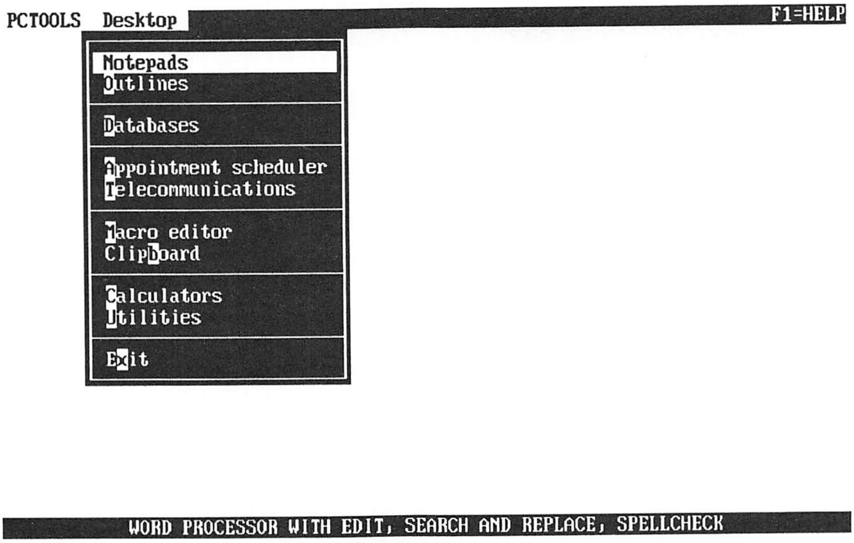
Note: In order to use a mouse, its driver must be installed in your AUTOEXEC.BAT or CONFIG.SYS file. Please see your mouse manual for more information.

The following table describes basic mouse techniques:

To	Do This
Position the Mouse Pointer	Move the mouse; the mouse pointer on the screen mirrors the motion of your hand.
Click	Move the mouse to the desired selection. Press and release the right or left mouse button.
Double-click	Move the mouse to the desired selection. Quickly press and release the right or left mouse button twice.
Drag	Hold down the right or left mouse button and move the mouse. Release the mouse button on the desired selection.
Select	Position the mouse pointer on what you want to select and click once.

Choosing Applications

When PC Tools Desktop starts, you see the main menu, which displays all nine applications on the Desktop pull-down menu. The Desktop menu is available at all times during any PC Tools Desktop program. In addition, if you loaded PC Shell resident before loading PC Tools Desktop, PC Shell also appears on the Desktop main menu, available at all times from any Desktop application.



WORD PROCESSOR WITH EDIT, SEARCH AND REPLACE, SPELLCHECK

When you open an application, it appears in its own window and can be opened, closed, moved, and (usually) changed in size and color. You can have multiple windows (as many as 15) open in PC Tools Desktop at once. Even though only one application is running at a time, PC Tools Desktop's ability to instantly switch lets you work in any window that is open.

To Choose an Application from the Desktop Menu:

Here is how you choose an application from the PC Tools Desktop menu:

Keyboard

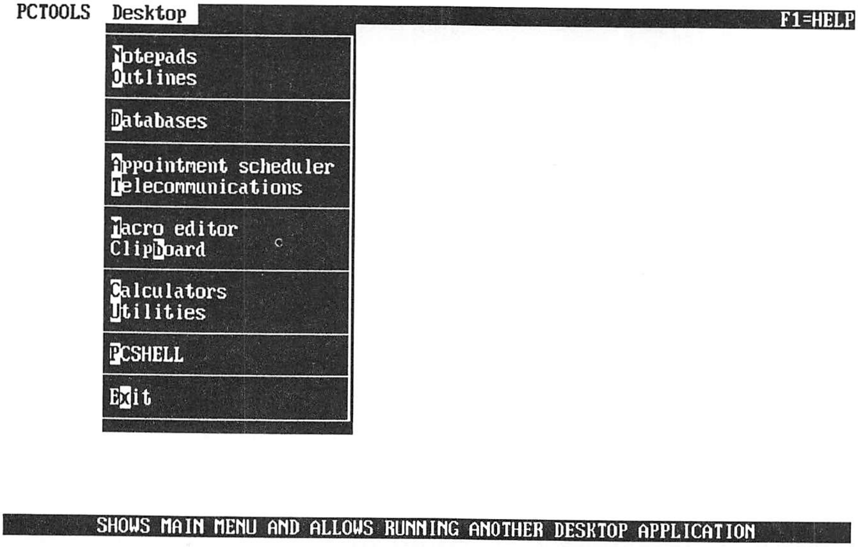
- Use the Up and Down arrow keys to highlight the application you want to open and press Enter.
  or
- Press the highlighted letter of the application you want to open.

Mouse

- Position the mouse pointer on the application you want to open and click the left button once.

Running PC Shell from Desktop

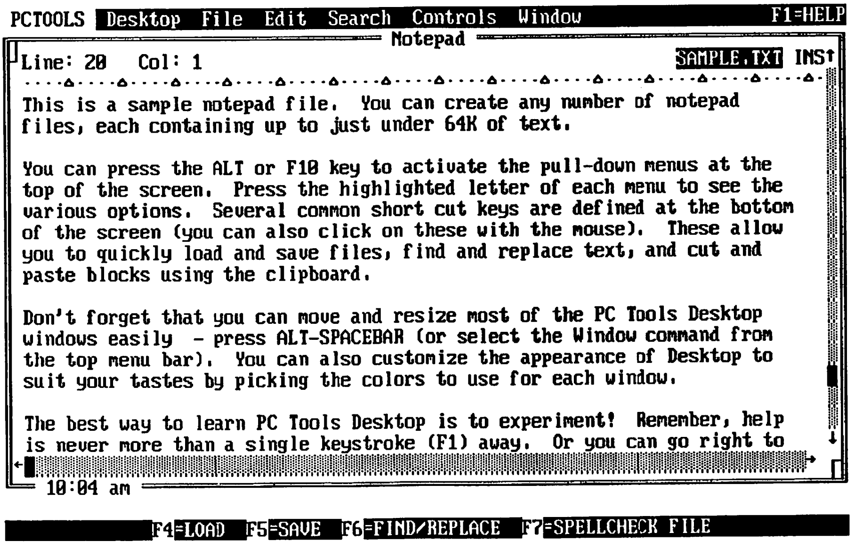
If PC Shell has been installed as a TSR before PC Tools Desktop was installed, then PC Shell can be run from the PC Tools Desktop menu (shown below).



SHOWS MAIN MENU AND ALLOWS RUNNING ANOTHER DESKTOP APPLICATION

Desktop Screen Layout

PC Tools Desktop uses a pull-down menu interface to make choosing and understanding commands easy. A window environment is used to display the individual applications and makes it possible to have several applications on the screen at once or for a single application to display multiple items (such as pull-down menus, dialog boxes, application windows) at the same time. Even though each application in PC Tools Desktop performs unique functions, the interface is the same. The illustration below shows the user interface in Notepads.



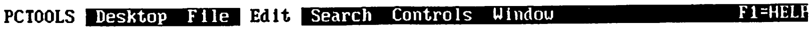
This is a sample notepad file. You can create any number of notepad files, each containing up to just under 64K of text.

You can press the ALT or F10 key to activate the pull-down menus at the top of the screen. Press the highlighted letter of each menu to see the various options. Several common short cut keys are defined at the bottom of the screen (you can also click on these with the mouse). These allow you to quickly load and save files, find and replace text, and cut and paste blocks using the clipboard.

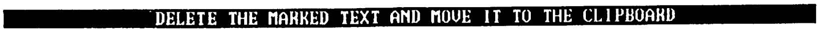
Don't forget that you can move and resize most of the PC Tools Desktop windows easily - press ALT-SPACEBAR (or select the Window command from the top menu bar). You can also customize the appearance of Desktop to suit your tastes by picking the colors to use for each window.

The best way to learn PC Tools Desktop is to experiment! Remember, help is never more than a single keystroke (F1) away. Or you can go right to

The program screen has the following features:



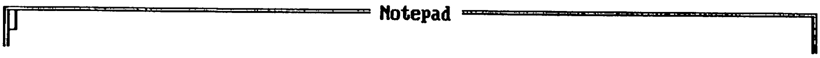
- **Horizontal menu bar:** is the bar across the top of the screen containing the names of pull-down menus available with each application, the program name, PC Tools Desktop, displayed in the upper-left corner, and the on-line Help command for quick answers and guidelines. Selecting Help from the menu bar or pressing F1 provides help that is relevant to the current context of the application.



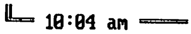
DELETE THE MARKED TEXT AND MOVE IT TO THE CLIPBOARD

- **Message bar:** is the bar across the bottom of the screen containing messages to guide you through using the application. When highlighted short cut keys (in red on color monitors) appear on the bottom line, the associated commands can be invoked by pressing the highlighted function key or positioning the mouse cursor on any portion of the command or highlighted key and clicking the mouse. For example, to save your document in Notepads just press F5 or click anyplace on "F5=SAVE" with the mouse; this brings up the Save dialog box.

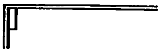
- **Application window:** contains the information for the application you are working on. The window shown in the first illustration is the Notepads application. Windows contain the following features:



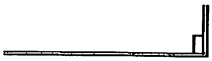
- **Window border:** used to indicate the active window and used with the mouse to move the window. When a window is "active" it means that keystrokes and mouse actions apply to that window. A window has a double-lined border if it is active and a single-lined border if it is not active, and the name of the application is displayed, centered, in the top border.



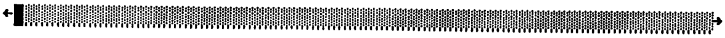
- **Time display:** shows the current time in the lower left corner of the active window's border.



- **Close box:** used with the mouse to "close" (or put away) a window. This may not be present on all windows.



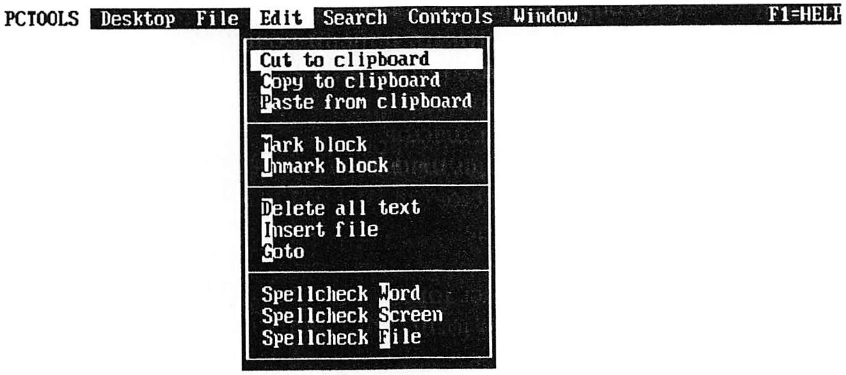
- **Resize box:** used with the mouse to resize the window. This may not be present in all windows.



- **Scroll bars:** used with the mouse to move, or "scroll" through the information displayed in the window. This may not be present in all windows.

Choosing Commands

Each application has its own set of commands, organized in pull-down menus on the horizontal menu bar, to perform specific tasks. For example, Notepads has several commands for editing text in one pull-down menu (shown below) and a different set of commands for loading and saving files in another pull-down menu.



To Choose Commands:

Commands are organized in the manual in the order they appear on the pull-down menus. The underlined letters of the commands indicate the letters you press to choose the commands. The following shows you various ways to choose commands in PC Tools Desktop applications.

Note: When you see a keystroke combination (Ctrl - L, for example), it means you need to press and hold down the Ctrl key at the same time that you press the "L" key.

Keyboard

1. Press Alt or F10 to highlight the command names on the horizontal menu bar.
2. Press the highlighted letter of a menu name to pull down the menu and display the commands.
3. Press the highlighted letter of a command name.
   For example, in Notepads, press Alt or F10, then E, then C to choose the Copy to Clipboard command from the Edit menu.

Keyboard arrow keys

1. Press Alt or F10 to highlight the command names on the horizontal menu bar.
2. Press the highlighted letter of a menu name to pull down the menu and display the commands.
3. Use the Up/Down arrow keys to move within a menu, and the Right/Left keys to move across menus. The Home and End keys move to the first and last items of a menu.

4. Press Enter to select the command you want.

Mouse click

1. Position the mouse pointer on the menu name you want and click. This pulls down the menu and displays the available commands.
2. Position the mouse pointer on the command you want and click.

Mouse drag

1. Position the mouse pointer on the menu name you want.
2. Press and hold the mouse button as you move it to the command you want. You are dragging the mouse as you do this.
3. Release the mouse button on the desired command. If you change your mind and don't want to make a menu selection, drag the mouse pointer outside the menu and release the mouse button.

To Close the Menu without Choosing a Command:

If a command has not been selected you can clear the menu. To do this

- Press Esc or F3.

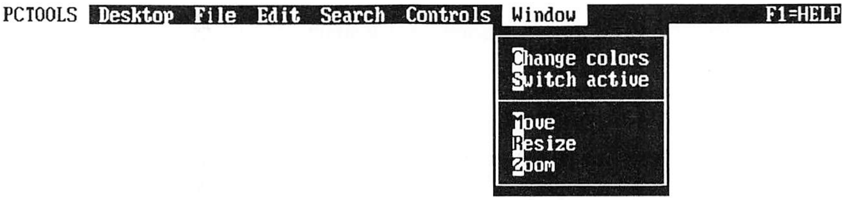
  or
- Click the mouse anywhere outside the pull-down menu.

Customizing Windows

A window is an area on the screen in which PC Tools Desktop applications display their information. Because you can have up to 15 windows at a time on the screen in Desktop, it provides you with the ability to customize the appearance of each window and move from window to window selecting an active window to work in.

For example, you can make the window a different color to distinguish it from other windows, move a window, and change the size of a window to make room for other windows. Customizing features include changing window color and size, moving windows, and switching active windows.

All PC Tools Desktop applications use windows and have window customizing commands found on the Window menu. These commands enable you to change window colors, switch the active window, move, and resize windows. All the possible commands found on the Window menu are shown below from Notepads.



Although all Desktop applications use windows, some windows cannot be changed. Therefore some applications do not have all of the possible customizing commands. For example, the Financial Calculator cannot be resized as you would lose many of the calculator's functions. Also, the ability to switch active windows is available only when you have two or more windows open. When you are working with only one window, you do not need to switch active windows, so the Switch active window command will not appear on the Window menu. In addition, windows that can't be resized won't have the resize option.

Changing Window Colors

There are two ways to set and save color and size changes in Notepads, Outlines, Databases, and the Macro Editor: If color and size changes are made to the current PC Tools Desktop files, they only affect that file. When another Notepad, Outline, Macro Editor, etc. file is opened, it will have the color and size characteristics last used and saved for that file. If, however, you choose the Save Setup command in Notepads, Outlines, Databases, and the Macro Editor, you can save window customizing features for each application, and this way have a different set of default window features for each application. There is more information about the Save Setup command in the Notepads, Outlines, Databases and Macro Editor chapters.

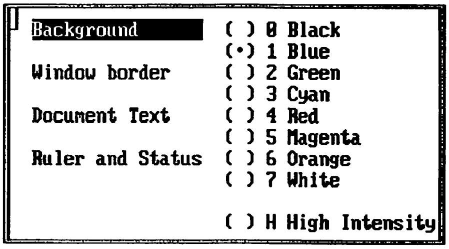
In addition, you can globally change colors for the pull-down menus, the horizontal menu bar, the dialog boxes and the messages boxes by using the System menu/window colors command in the Utilities application.

Change Colors

The changeable features and command names for changing window colors differ slightly from application to application, but the following procedure works for all change window colors options.

Keyboard

1. Choose **Change colors** from the Window menu. The application's Change Colors dialog box appears.



```
Background           ( ) 0 Black
                     (•) 1 Blue
Window border        ( ) 2 Green
                     ( ) 3 Cyan
Document Text        ( ) 4 Red
                     ( ) 5 Magenta
Ruler and Status     ( ) 6 Orange
                     ( ) 7 White

                     ( ) H High Intensity
```

The Change Window Colors dialog box contains the following options:

Background: changes the color of the window background.
Window border: changes the color of the window border.
Document text: changes the color of the text.
Ruler and Status: changes color of the ruler and status line.

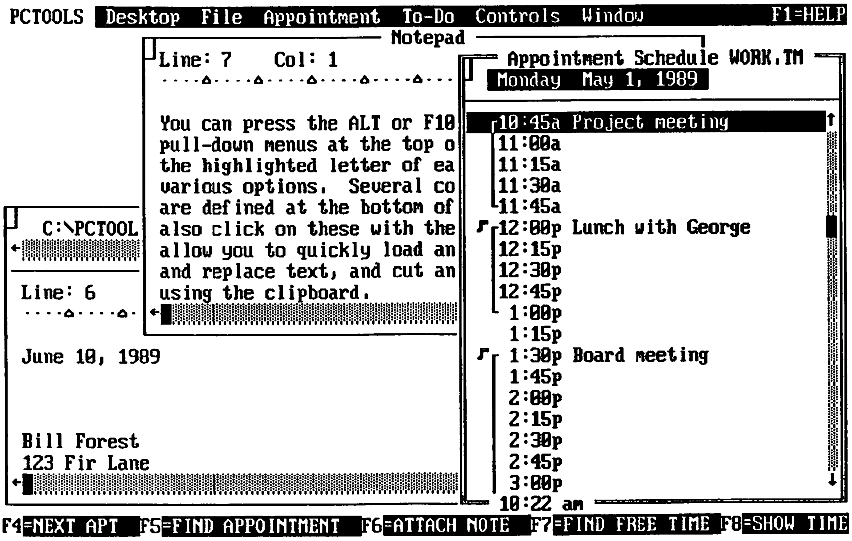
2. Use the Up and Down arrow keys to select the option corresponding to the area you want to change color. The current color is indicated in the color options.
3. Type the number corresponding to the color you want. You can also select H for high intensity. In most cases, as soon as you do, the color change is immediately visible beneath the Change Window Colors dialog box. This lets you preview the colors before you close the dialog box.
4. Press Esc or F3 to change the window colors and close the dialog box.

Mouse

1. Choose **Change colors** from the Window menu. The application's Change Window Colors dialog box appears.
2. Click on the option corresponding to the area you want to change color. The current color is indicated in the color options.
3. Click on the color option you want. In most cases, as soon as you do, the color change is immediately visible beneath the Change Window Colors dialog box. This lets you preview the colors before you close the dialog box.
4. Click on the close box to change the window colors and close the dialog box.

Switching the Active Window

You can have more than one window open at once, but you can work in only one window at a time, the active window. The active window is the top window and is indicated by a double-line border; all other windows have a single-line border. The horizontal menu bar always shows the commands for the active window. The illustration below shows several stacked windows, with the Appointment Scheduler as the active window.


PCTOOLS
Desktop File Appointment To-Do Controls Window F1=HELP
Notepad
Appointment Schedule WORK.TM
F4=NEXT APT F5=FIND APPOINTMENT F6=ATTACH NOTE F7=FIND FREE TIME F8=SHOW TIME

```
Line: 7    Col: 1

You can press the ALT or F10
pull-down menus at the top o
the highlighted letter of ea
various options. Several co
are defined at the bottom of
also click on these with the
allow you to quickly load an
and replace text, and cut an
using the clipboard.

C:\PCTOOL
Line: 6

June 10, 1989


Bill Forest
123 Fir Lane
```

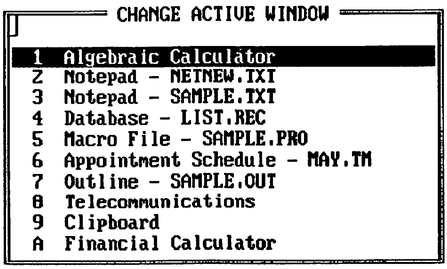
```
Monday May 1, 1989

10:45a Project meeting
11:00a
11:15a
11:30a
11:45a
12:00p Lunch with George
12:15p
12:30p
12:45p
 1:00p
 1:15p
 1:30p Board meeting
 1:45p
 2:00p
 2:15p
 2:30p
 2:45p
 3:00p
10:22 am
```

Switch Active

Note: If you have a mouse, the simplest way to switch the active window is to click in a window to make it the active one. However, if no part of the window you want is visible, you need to choose the **Switch Active** command from the Window menu and perform the following:

Keyboard

1. Choose Switch Active from the Window menu or press F9 (it's the same as pressing Alt - W - S).
   If there are only two windows open, they are swapped. If you have more than two open windows, the following dialog box appears showing a list of all the open windows, what application is associated with the window, and the name of the file loaded into the window:



```
CHANGE ACTIVE WINDOW

1  Algebraic Calculator
2  Notepad - NETNEW.TXT
3  Notepad - SAMPLE.TXT
4  Database - LIST.REC
5  Macro File - SAMPLE.PRO
6  Appointment Schedule - MAY.TM
7  Outline - SAMPLE.OUT
8  Telecommunications
9  Clipboard
A  Financial Calculator
```

2. Select the window you want to make active by pressing the Up and Down arrow keys to move the highlight bar to the window you want and press Enter.
   or
   Press the number or letter associated with the window you want active.
   The selected window is "activated," and placed on top.

Mouse

- Click on any portion of the line describing the window you want as the active window. For instance, in the example above, you can click on "7," "OUTLINE," or "SAMPLE.OUT" to select the window containing SAMPLE.OUT.
  The selected window is "activated," and placed on top.

Moving a Window

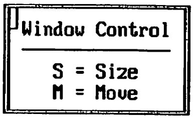
When you move a window, its size doesn't change, just the window position.

Move

The **Move window** command always operates on the active (top) window.

Keyboard

1. Choose **Move** from the Window menu.
   The Window Control dialog box is displayed.



Window Control

S = Size
M = Move

   or
   Press Alt - Spacebar to display the move dialog box. Use the Up and Down arrow keys to select the Move option and press Enter or just press M.
2. Use the Up, Down, Left, and Right arrow keys to reposition the window.
3. Press Enter when the window is where you want it.

Mouse

1. Position the mouse pointer on the top window border (but not in the close box).
2. Click and then drag the window to reposition it.
3. Release the mouse button.

Resizing a Window

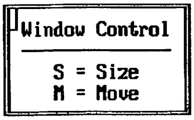
If there is not a Resize box in the window you are using, the window cannot be resized.

Resize

You can change the size of a window by performing the following task.

Keyboard

1. Choose **Resize** from the Window menu.
   The Window Control dialog box is displayed.

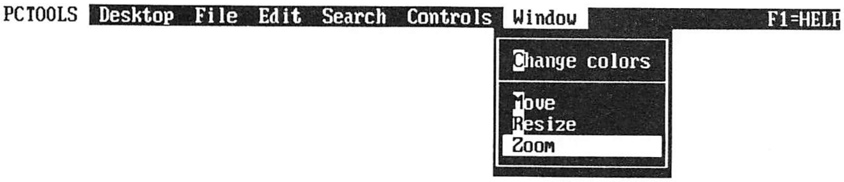
   or
   Press Alt - Spacebar to display the Size dialog box. Use the Up and Down arrow keys to select the Size option and press Enter or just press S.
2. Use the Up, Down, Left, and Right arrow keys to resize the window. The upper-left corner remains in the same place while the lower-right corner moves.
3. Press Enter when the window is the size you want.

Mouse

1. Position the mouse pointer on the size box in the lower-right corner. If there is no size box, the window cannot be resized.
2. Click and then drag the size box to resize the window. The upper-left corner remains in the same place while the lower-right corner moves.
3. Release the mouse button.

Resizing with the Zoom Command

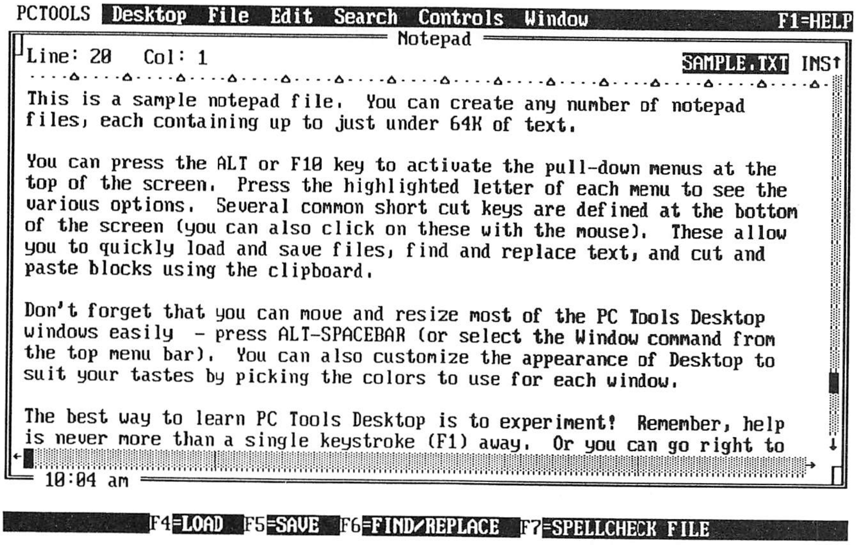
Notepads, Outlines, Databases, the Macro Editor, and the Clipboard applications enable you to quickly resize windows. Using the Zoom command on the Window pull-down menus, you can change your application's window from a smaller-sized window to full screen display (and back again) with just a couple of keystrokes or click of the mouse button. The illustration below shows you the Zoom command on the Notepads menu.



Zoom

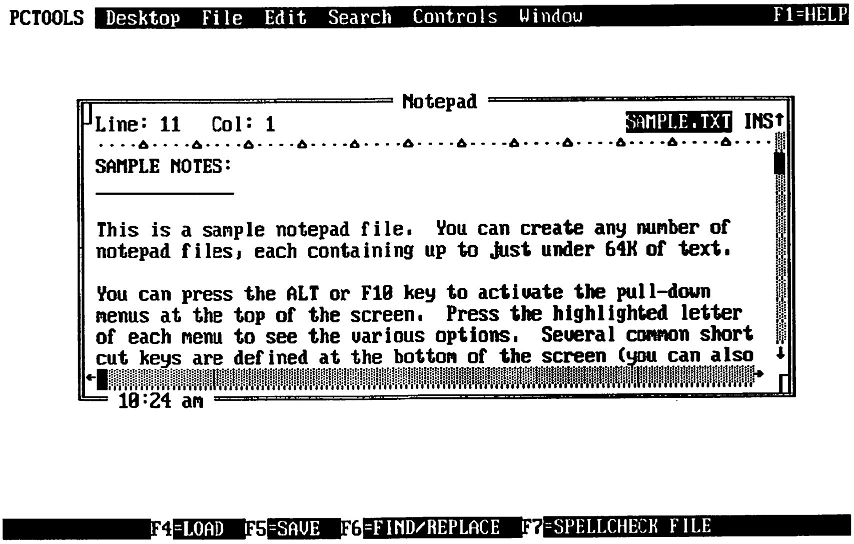
The Zoom command enables you to quickly switch from a small window to a full screen window and back again.

- Choose **Zoom** from the Window menu. If your application's window is small when you choose **Zoom**, it is expanded to fill the screen (see below).



```
This is a sample notepad file.  You can create any number of notepad
files, each containing up to just under 64K of text.

You can press the ALT or F10 key to activate the pull-down menus at the
top of the screen.  Press the highlighted letter of each menu to see the
various options.  Several common short cut keys are defined at the bottom
of the screen (you can also click on these with the mouse).  These allow
you to quickly load and save files, find and replace text, and cut and
paste blocks using the clipboard.

Don't forget that you can move and resize most of the PC Tools Desktop
windows easily  - press ALT-SPACEBAR (or select the Window command from
the top menu bar).  You can also customize the appearance of Desktop to
suit your tastes by picking the colors to use for each window.

The best way to learn PC Tools Desktop is to experiment!  Remember, help
is never more than a single keystroke (F1) away.  Or you can go right to
```

If you want to see your application in a smaller window, choose **Zoom** again. The window is automatically resized to the size and position you last saved.



SAMPLE NOTES:

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You can press the ALT or F10 key to activate the pull-down menus at the top of the screen. Press the highlighted letter of each menu to see the various options. Several common short cut keys are defined at the bottom of the screen (you can also

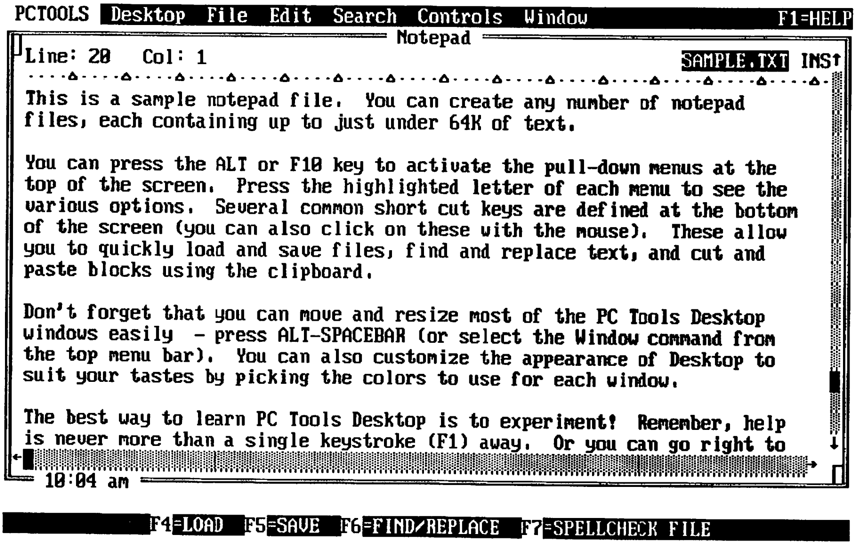
Closing a Window

Keyboard
Press Esc or F3.

Mouse
Click on any corner of the close box in the upper-left corner.

Scrolling in Windows

Some applications cannot display all of their information in the available window space. For example, your text in a Notepad file is probably more than will fit on one screen. In order to view all of the information associated with an application, you can scroll, or move through, the window.



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You can press the ALT or F10 key to activate the pull-down menus at the top of the screen. Press the highlighted letter of each menu to see the various options. Several common short cut keys are defined at the bottom of the screen (you can also click on these with the mouse). These allow you to quickly load and save files, find and replace text, and cut and paste blocks using the clipboard.

Don't forget that you can move and resize most of the PC Tools Desktop windows easily - press ALT-SPACEBAR (or select the Window command from the top menu bar). You can also customize the appearance of Desktop to suit your tastes by picking the colors to use for each window.

The best way to learn PC Tools Desktop is to experiment! Remember, help is never more than a single keystroke (F1) away. Or you can go right to

You can use the keyboard or the mouse to scroll in a window.

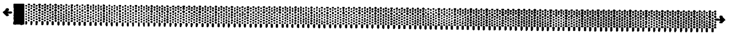
To Scroll through an Application:

Keyboard

- Use the Up and Down arrow keys to scroll up or down one line at a time.
  or
- Use the PgUp or PgDn key to move up or down one window full at a time or the Home or End keys to go to the beginning or end.

Mouse

- Press the right mouse button in a window and drag the mouse. Moving the mouse to the top of a window scrolls it up, and moving the mouse to the bottom of the window scrolls it down. With wordwrap turned off, you can also scroll through a file horizontally by clicking the right mouse and dragging the mouse to the right or left.
  or
- Use the following scrolling features:



Scroll bars: used to scroll in a window by using the following:

Scroll arrows: clicking on a scroll arrow moves the display incrementally. Clicking and holding down on the scroll arrow scrolls the display continuously.

Scroll box: used to scroll to a specific part of the application. For example, dragging the scroll box to the middle of the scroll bar displays the middle of the application's data.

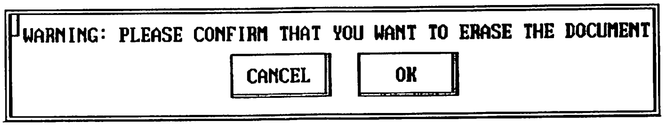
- Click on the scroll arrow to scroll incrementally a few lines at a time.
  or
- Click and hold the mouse button on the scroll arrow to scroll continuously.
  or
- Click in the scroll bar to indicate the approximate place in the application you want to display. For example, point and click half way down the scroll bar to view the middle section of the application.
  or
- Drag the scroll box to the approximate place in the application you want to display.

Using Dialog Boxes

PC Tools Desktop displays dialog boxes when a program requires additional information to carry out a command or needs to give you a message. A dialog box is similar to a window, appearing over the top of any existing windows.

Message Dialog Boxes

Message dialog boxes contain messages and confirmation buttons so you can respond to the message. For example, if you want to delete all text in a Notepads file, a message box warns you that all the text will be erased.



WARNING: PLEASE CONFIRM THAT YOU WANT TO ERASE THE DOCUMENT

A message dialog box contains the following parts:

WARNING: PLEASE CONFIRM THAT YOU WANT TO ERASE THE DOCUMENT

Message: displays what the program needs to tell you.

Confirmation button: provides a way to dismiss the message box after you have read the message.

You must respond to the message box by selecting a confirmation button. This closes the message box. To respond to the message perform the following:

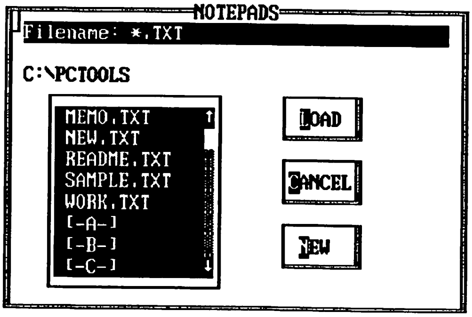
Keyboard
- Press Enter to select the highlighted button, or Esc or F3 to dismiss the message box.

Mouse
- Click on the confirmation button, or click on the close box to dismiss the message box.

If there are multiple options, you can either use the Tab key to select a button, or press Alt - letter (where letter is the highlighted letter in the button). If you are using a mouse, simply click on the appropriate button.

Command Dialog Boxes

Command dialog boxes require you to provide additional information, or select options, or both. For example, the File Load dialog box contains several areas that are used when opening or creating files.

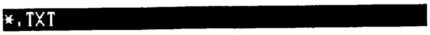


Filename: *.TXT

C:\PCTOOLS

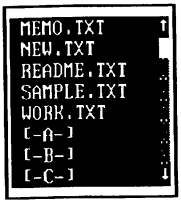
MEMO.TXT
NEW.TXT
README.TXT
SAMPLE.TXT
WORK.TXT
[-A-]
[-B-]
[-C-]

The following are definitions of the areas used in the File Load dialog box, which is illustrated above:



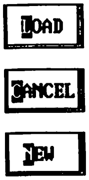
*.TXT

Text box: is the area where you can type information that replaces the current text if there is any (for example, names of files, specific words, or numbers). This text is used when the command is carried out. Text boxes sometimes contain default settings, as in this case, "*.TXT."



MEMO.TXT
NEW.TXT
README.TXT
SAMPLE.TXT
WORK.TXT
[-A-]
[-B-]
[-C-]

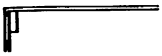
List box: is the box containing a list of available choices instead of typing text in the text box. Selections made in the list box automatically appear in the text box.



Command button: carries out the action according to its name. Dialog boxes frequently have at least two command buttons: "Cancel" and "OK" or the name of the function itself, in this case, "LOAD."

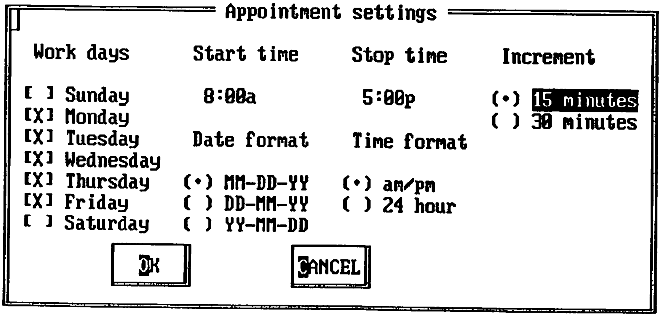
Cancel: ignores any changes to the settings you may have made and closes the dialog box. The Cancel button lets you explore a dialog box without committing yourself to any changes.

OK: accepts the settings in the dialog box, applies them to the program, and closes the dialog box. The File Load dialog box uses "LOAD" instead of "OK" to be absolutely clear.

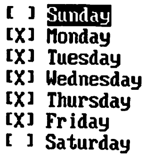


Close box: used with the mouse to close the dialog box.

In addition, some dialog boxes have Option check boxes that toggle settings or options on and off. The Appointment settings dialog box from the Appointment Scheduler is an example.

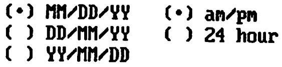


```
                    Appointment settings
Work days      Start time     Stop time     Increment

[ ] Sunday       8:00a          5:00p       (•) 15 minutes
[X] Monday                                  ( ) 30 minutes
[X] Tuesday    Date format    Time format
[X] Wednesday
[X] Thursday   (•) MM-DD-YY   (•) am/pm
[X] Friday     ( ) DD-MM-YY   ( ) 24 hour
[ ] Saturday   ( ) YY-MM-DD
```



```
[ ] Sunday
[X] Monday
[X] Tuesday
[X] Wednesday
[X] Thursday
[X] Friday
[ ] Saturday
```

Option check boxes: These options can be identified by the bracket characters [ ]. You can select multiple items in a list, and each selected item will have the "X" in the box. You can make selections in Option check boxes with the keyboard or the mouse. Tab to the appropriate option check box and press Enter or click the option check box with the mouse to turn the setting on or off. Pressing the Shift - Tab keys moves you backwards through the items.



```
(•) MM/DD/YY   (•) am/pm
( ) DD/MM/YY   ( ) 24 hour
( ) YY/MM/DD
```

Option buttons: These buttons can be identified by the parenthesis characters ( ). They enable you to pick from a variety of options by selecting only one option. Selecting any one option turns off all other options in the same group. (This is similar to the operation of car radio buttons.)

Use the following procedure among a group of option buttons to select an option:

Keyboard

1. Tab to the desired group of option buttons. Pressing the Shift - Tab keys moves you in the opposite direction.
2. Use the arrow keys to move within the group.
3. When the desired selection is highlighted, press Enter. This switches off any other option buttons within the group.

Mouse

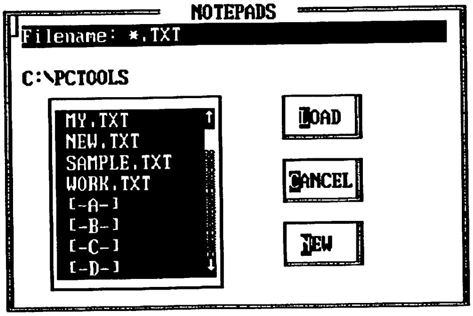
- Click the desired option button to make the selection. This switches off the other option buttons within the group.

Note: When using the Tab key to move in a dialog box with both Option Check boxes and Option buttons, you will notice that each press of the Tab key moves you to the next Option Check box (since more than one can be selected). However, since the Tab key will only move you to the next group of option buttons, you need to use the arrow keys to select the button you want (since only one can be selected).

Using the File Load Dialog Box

Some applications, for example, Notepads, open by requesting the name of a file to be loaded into the application window.

Files are always loaded using the File Load dialog box. Since you need to use the File Load dialog box in many applications, details for using it are explained here. This example of the File Load dialog box provides a guided tour of moving among the parts of a dialog box and selecting options.



NOTEPADS

Filename: *.TXT

C:\PCTOOLS

When you choose an application, for example, Notepads, from the Desktop pull-down menu, the File Load dialog box appears listing files with the .TXT (text) extension in the list box.

The list box contains a list of the files with extensions in the current directory for the current application. In addition, drives and directories appear in the list box so you can move to a different drive or directory to select a file. Drives and directories are indicated with brackets around the drive or directory name, for example, [-C-] and [PCTOOLS], and are selected the same way a file is selected.

You can change the name of the default directory, PCTOOLS, for Notepads, Outlines, Databases, and the Macro Editor. Type the directory's name in the Filename text box and press Enter (for example, \NOTES). The next time you load a file or open a new file using the File Load dialog box in any of these applications, the directory name will be the name you changed it to. This allows you to have one directory for your Notepad files, another one for your Database files, and so on.

You can also change the default extension that Notepads or Outlines use by choosing Notepads or Outlines from the Desktop menu to bring up the File Load Dialog box, typing the new extension, pressing Enter, then exiting from the File Load Dialog box by pressing Escape or clicking on the close box. This will set the changed extension for any future file loads. For example, the default extension for Notepads is .TXT; you can enter .* to select all files in the subdirectory, or .XYZ to select those files with the extension of .XYZ, etc. The next time you use Notepads, the extension used will be the one you set it to.

To Open a New File Using the File Load Dialog Box:

To create a new file, you need to supply a name for the file in the text box, and then select the **New** command button. The cursor is positioned in the text box ready for you to begin typing.

Note: If you do not supply a file name in the text box, Desktop automatically creates a default file for you and gives it the file name WORK with an extension appropriate for the current application. For example, in Notepads the file name is WORK.TXT.

Keyboard

1. When you are asked to enter a file name, type a file name and extension for the application in the text box. Any legal DOS file name can be entered, including a path name if you do not want the file to be created in the directory shown.

   If you do not enter an extension, the default extension corresponding to the application is appended. For example, if you are in Notepads and enter the file name JOBS, the extension .TXT will be appended to create JOBS.TXT. This way, you don't need to remember the extensions for each application. If you want a file name with no extension, simply type the file name and end it with a period (for example, JOBS.). In this case, no extension is appended.

As you start typing a file name, the name that originally appeared in the text box when you opened it is overwritten.

2. Press Enter.
3. Press Alt-N.
   or
   Tab to the New command button and press Enter.

Mouse

1. When you are asked to enter a file name, type a file name and extension for the application in the text box. Any legal DOS file name can be entered, including a path name if you do not want the file to be created in the directory shown.

   If you do not enter an extension, the default extension corresponding to the application is appended. For example, if you are in Notepads and enter the file name JOBS, the extension .TXT will be appended to create JOBS.TXT. This way, you don't need to remember the extensions for each application. If you want a file name with no extension, simply type the file name and end it with a period (for example, JOBS.). In this case, no extension is appended.

   As you start typing a file name, the name that originally appeared in the text box when you opened it is overwritten.

2. Click on the New command button.

To Load an Existing File Using the File Load Dialog Box:

To load an existing file, the name of the file must be entered in the text box. Existing files with the application's default extension appear in the list box when the File Load dialog box appears, and the text box contains the wildcard file name used to select the list of files.

You can either type the file name in the text box or select the file from the list box.

To Type the File Name:

When the File Load dialog box appears, the cursor is positioned in the text box ready for you to begin typing.

1. Type a file name and extension for the file you wish to load. As you start typing a file name, the name that originally appeared in the text box when you opened it is overwritten.

   If you do not enter an extension, the default extension corresponding to the application is appended. For example, if you are in Notepads and enter the file name JOBS, the extension .TXT will be appended to create JOBS.TXT. This way, you don't need to remember the extensions for each application. If you want a file name with no extension, simply type the file name and end it with a period (for example, JOBS.). In this case, no extension is appended.

2. Press Enter to load the file.

To Select a File Name from the List:

You can change the name of the PC Tools default directory by entering a new path name in the text box and pressing Enter, or you can use the following procedure for changing directories and drives as well. You can also change the file wildcards to show all or selected files. For example, changing *.TXT to *.* in Notepads will display all files instead of just the files with .TXT extensions.

Once you have the appropriate directory and list of files to choose from, perform the following task:

Keyboard

1. Select the file name you want to load by pressing the Up and Down arrow keys, or the PgUp, PgDn, Home and End keys to move through the list box. As a file name is selected, it is highlighted and displayed in the text box.
2. Press Enter and the file is loaded.
   or
   Tab to the Load command button and press Enter.
   or
   Press Alt and L to automatically load the file.
   The selected file is loaded into the application window.

Mouse

1. Select the file you want to load by clicking on its file name in the list box. (Use the scroll bar if there are more files than will fit in the list box.) The selected file is displayed in the text box.
2. Click on the **Load** command button.
   or
   Double-click on the selected file from the list box.
   The selected file is loaded into the application window.

To Cancel the File Load Dialog Box:

Canceling the File Load dialog box causes the box to disappear and returns you to the place you were in Desktop before the file load was requested.

Keyboard

- Press Tab to select the Cancel command button and press Enter.
  or
- Press Alt - C.
  or
- Press Esc or F3. This cancels any dialog box.

Mouse

- Click on the upper-left corner of the close box.
  or
  Click the Cancel command button.

Getting Help

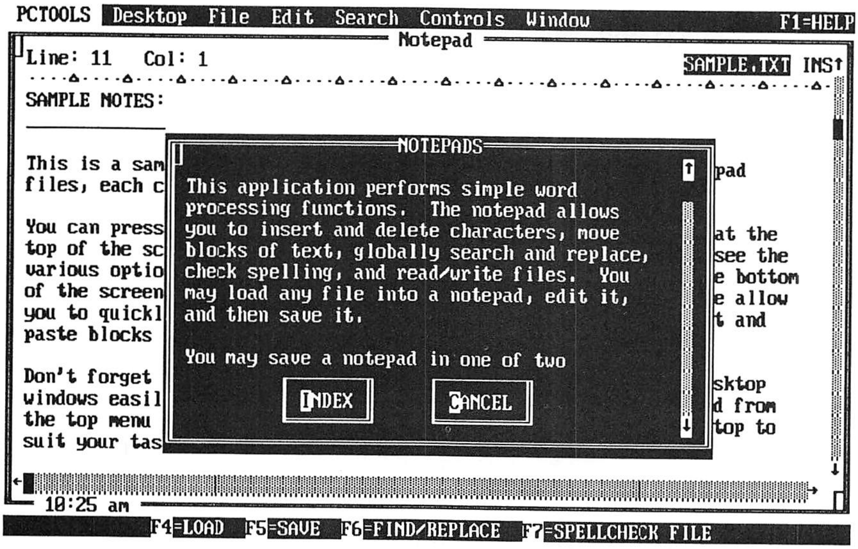
PC Tools Desktop provides context sensitive Help, available at all times by simply pressing the F1 key. If you are unsure what a certain pull-down menu item does, use Help to see a short description. For example, in Notepads, pressing F1 provides you with a help message about what Notepads is and what it does.

In addition, Pressing F2 anywhere in the application displays the Help Index.

To Get Help:

1. Press F1 anywhere in an application.
   or
   Select **Help** from the Horizontal Menu bar.

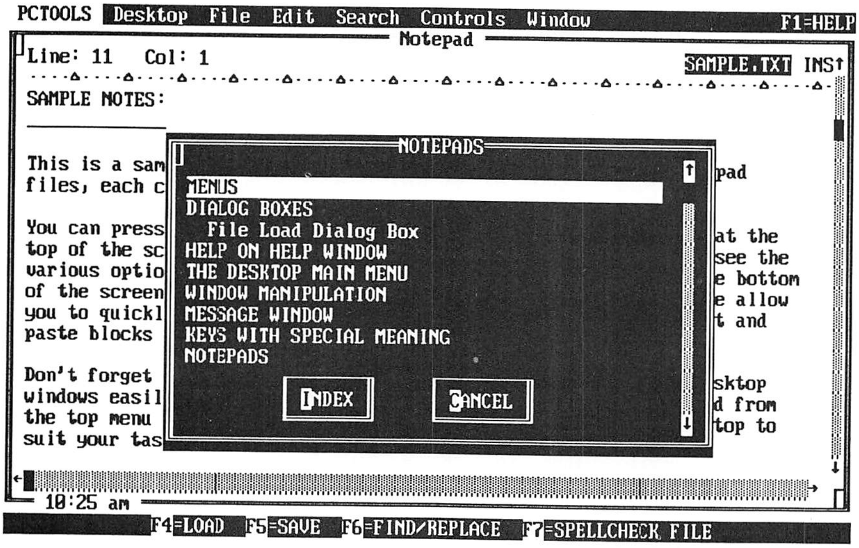
The correct Help dialog box appears, giving you information for the function you are using or your current place in the application. If the Help text does not all fit in the dialog box window, you can scroll new text into the box using the keyboard or the mouse.



This application performs simple word processing functions. The notepad allows you to insert and delete characters, move blocks of text, globally search and replace, check spelling, and read/write files. You may load any file into a notepad, edit it, and then save it.

You may save a notepad in one of two

2. Select for information on other features in the application. The Help Index (shown below) appears in the dialog box so you can select an entry.



Notepads

Notepads is the PC Tools Desktop word processor. It enables you to create, edit, and print standard text files and is compatible with WordStar® files. Notepads fully supports the keyboard and Microsoft® or compatible mouse and has full editing capabilities including search and replace, moving blocks of text, and a built-in spelling checker. Each Notepads file is limited to about 60,000 characters. ASCII graphics characters are also supported in Notepads.

Since PC Tools Desktop can be memory resident, you can have instant access to a word processing tool with Notepads. For example, if you're working with a spreadsheet application and need to make some notes for a report, you simply hotkey into PC Tools Desktop, make your notes using the word processing functions in Notepads, and then hotkey back out of PC Tools Desktop without affecting your spreadsheet application.

With Notepads, you can do any of the following:

- Create or open a file
- Search for and replace text
- Check your document for spelling errors
- Creates headers and footers and define page layouts
- Add customized printing commands
- Print your documents
- Create and use WordStar compatible files
- Use the Clipboard to transfer text to or from other applications

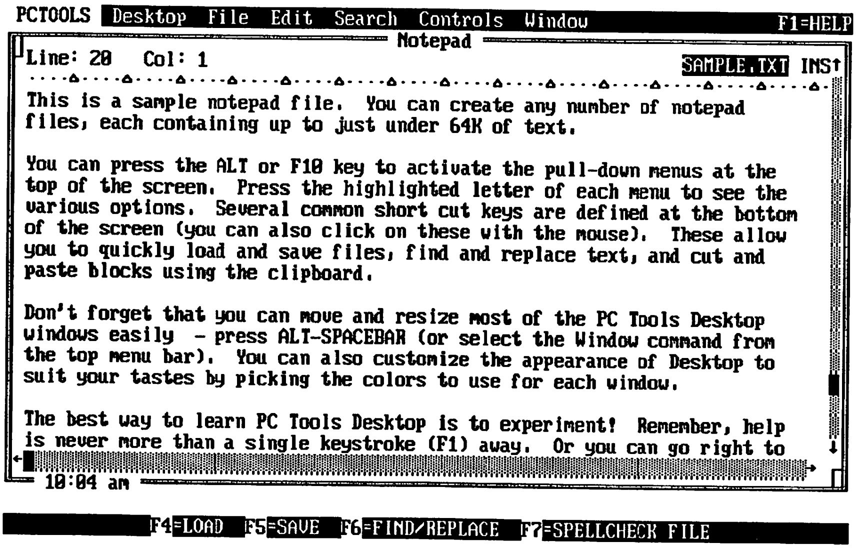
Since PC Tools Desktop enables you to have as many as 15 windows open, you can have 15 different Notepads or a combination of Notepads and other applications open at once. You can also edit any text file (for example, your AUTOEXEC.BAT or CONFIG.SYS files) or any WordStar compatible file on your disk.

Starting Notepads

Once **Notepads** is chosen from the Desktop pull-down menu, the File Load dialog box appears. See the "Getting Started" chapter for information on using the File Load dialog box.

After a Notepads file has been loaded or created, the Notepads window (below) is displayed.

Note: You can display as many as 15 Notepads simultaneously by choosing Notepads again from the Desktop pull-down menu.



This is a sample notepad file. You can create any number of notepad files, each containing up to just under 64K of text.

You can press the ALT or F10 key to activate the pull-down menus at the top of the screen. Press the highlighted letter of each menu to see the various options. Several common short cut keys are defined at the bottom of the screen (you can also click on these with the mouse). These allow you to quickly load and save files, find and replace text, and cut and paste blocks using the clipboard.

Don't forget that you can move and resize most of the PC Tools Desktop windows easily - press ALT-SPACEBAR (or select the Window command from the top menu bar). You can also customize the appearance of Desktop to suit your tastes by picking the colors to use for each window.

The best way to learn PC Tools Desktop is to experiment! Remember, help is never more than a single keystroke (F1) away. Or you can go right to

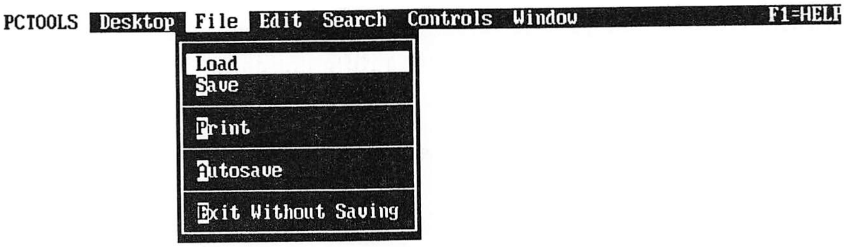
From top to bottom, the Notepads screen contains the following parts:

- **Notepads Horizontal Menu bar:** contains the names of pull-down menus and on-line Help for quick answers and guidelines.
- **Window border:** indicates the active window with a double border. The inactive window has a single border. The time is also displayed on the lower left corner of the active window's border.
- **Notepad window:** contains the text of the file you're working with.
- **Close box:** used with the mouse to close a window.
- **Status line:** shows what line and column the cursor is on, the file name, and whether you are in insert or overtype mode. When INS does not appear in the upper-right corner of the window, you are in overtype mode. Also displays additional information, like Spelling in progress.
- **Tab ruler:** sets and changes tab stops if the Tab Ruler display is on.
- **Selection bar:** blank space in the first column used with the mouse to select a line of text.

- **Scroll bars:** used with the mouse to move, or "scroll" through the file.
- **Resize box:** used with the mouse to resize the window.
- **Message bar:** contains messages to guide you through your work. When you open Notepads the short cut keys are displayed. You can select any of the commands by pressing the highlighted function key or positioning the mouse cursor on any portion of the command or highlighted key and clicking the mouse. For example, to save your document just press F5 or click anyplace on "F5=SAVE" with the mouse; this brings up the Save dialog box.

Working with Files

The File pull-down menu below provides a list of commands for working with your Notepad files.



Load

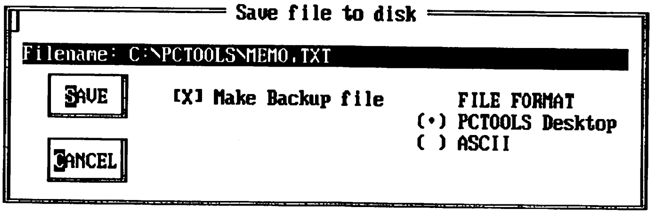
- Choose **Load** from the File menu.
  The File Load dialog box appears containing the names of the existing files, drives and directories. For information about using the File Load dialog box, see Using the File Load Dialog Box in the "Getting Started" chapter.

Note: When you load a file into the Notepad window using the **Load** command, any existing Notepad file in the current window is closed and replaced by the file you are loading. Any changes made to the current file are lost when you load another file, so be sure to save changes to your current file before opening another one. Files loaded into other Notepad windows are not affected.

Save

Notepad files are automatically saved when you close the Notepad window by pressing Esc or clicking in the close box. In addition, you can save a file using the **Save** and **Autosave** commands from the File menu.

1. Choose **Save** from the File menu.
   The **Save** dialog box appears with the name of the current file in the Filename text box.



```
Filename: C:\PCTOOLS\MEMO.TXT
[X] Make Backup file          FILE FORMAT
                              (•) PCTOOLS Desktop
                              ( ) ASCII
```

Note: If you want to save the file under a different name, just enter a new name in the text box.

2. Select any of the following **Save** options:

   PC Tools Desktop: saves your Notepad file in PC Tools Desktop format, preserving all tabs, page layout commands, headers and footers, and window colors and sizes. PC Tools Desktop is the default file format.

   ASCII: saves your Notepad file as a straight text file with return characters at the end of each line. This option provides maximum interchangeability with other word processors, but does not save formatting information. If you load an existing ASCII file, it will be saved as ASCII unless you change the option.

   Make Backup file: in addition to saving the file to the specified file name and file format, this option creates a backup file for your Notepad file and gives it the .BAK extension. The default backup option is ON. If you do not want to create a backup file, select this option to turn it off.

3. Select the **Save** command button to save your file with the options you've selected.
   The dialog box closes.

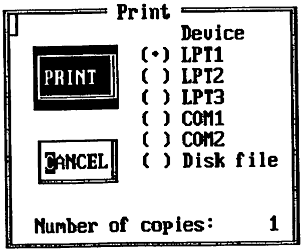
Print

You can make use of your printer's formatting capabilities such as boldface, italics, and underlining by inserting printer control macros into your Notepads file. In addition, we have included a simple way to send setup commands to your printer for your favorite font, type size, printing mode, etc. by using a macro called SETUP.

To make your printing task easier, PC Tools Desktop includes macro files for the Epson® FX-80, the IBM® Proprinter, Hewlett-Packard® Laserjet, and any Panasonic® printer. See the "To Build Printer Control Macros" section in the Macro Editor chapter to learn how to add printing commands to your Notepads text and to learn how to use the SETUP macro.

Before you start printing, make sure your printer is hooked up and turned on and you have selected the layout options you want using the **Page Layout** command from the Controls menu. See the section entitled Formatting the page for printing later in this chapter.

1. Choose **Print** from the File menu.
   The Print dialog box appears.



Device
(•) LPT1
( ) LPT2
( ) LPT3
( ) COM1
( ) COM2
( ) Disk file

Number of copies: 1

2. Select any of the following **Print** options:

   LPT (1, 2, or 3): selects which one of the parallel printer ports to print your file to. Printer port number 1 is the default.

   COM (1, 2): selects which one of the serial printer ports to print your file to.

   Disk file: formats and saves the text for printing and writes the file to disk for printing at a later date. The print file name consists of the same file name with a .PRT extension.

   Number of copies: specifies the number of copies you want to print.

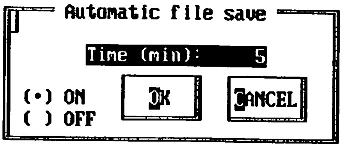
3. Select the **Print** command button to start printing.
   While you are printing either to disk or to the printer, a message appears in the Status line.

Autosave

You can have Notepads save your file automatically at specified intervals. The **Autosave** command saves a file just like the **Save** command, but at a specific time interval that you set. It is recommended that you use this command to minimize any data loss from power outages.

Autosave is global to Notepads, Outlines, the Appointment Scheduler, and the Macro Editor. When Autosave is turned ON or OFF in any of these applications, it is turned ON or OFF in all of them.

1. Choose **Autosave** from the File menu.
   The Automatic file save dialog box appears.



Automatic file save

Time (min): 5

(•) ON
( ) OFF

2. Type a number representing the number of minutes between each automatic save. The default setting is for 5 minutes
3. Select either one of the automatic save option buttons:

   On: turns on the automatic save for the amount of time you've set. The default setting is ON.

   Off: turns off the automatic save.

4. Select **OK** to set the automatic save.
   At the specified interval your file is saved.

Exit Without Saving

You can exit Notepads without saving any of the changes you made since you last saved. This is helpful if you've made changes and then decide you don't want to keep them.

- Choose **Exit Without Saving** from the File menu.
  This closes the window without saving the changes you've made since the last time you saved.

Note: This procedure is not the same as pressing Esc or clicking in the close box. These methods of exiting save your changes before exiting.

Editing Text

When you want to create a new Notepad file or make changes to an existing file, you need to perform basic word processing tasks.

To Edit Text Using the Keyboard:

The basic editing operations and keys that perform them are displayed in the table below:

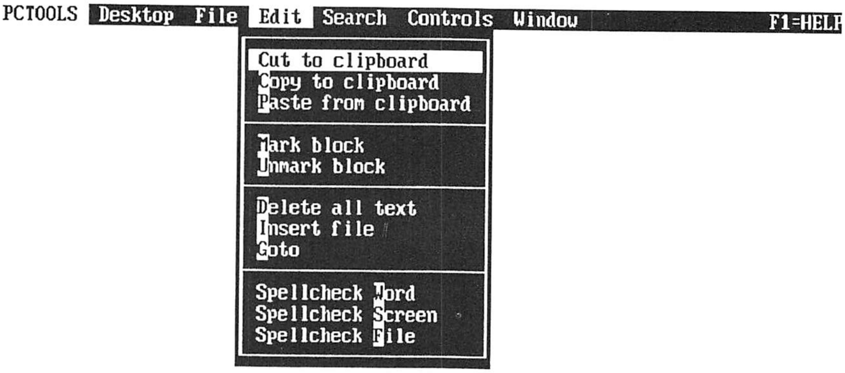
Note: Make sure Insert mode is selected or some of the following keyboard functions won't work. You can toggle the Insert/Overtype mode from the Controls menu.

To	Press
Insert a character at the cursor	A character
Insert a space at the cursor	Spacebar
Insert a tab at the cursor	Tab
Insert a paragraph at cursor	Enter
Insert ASCII graphics character	Alt and decimal equivalent (for example, Alt-7 gives you a bullet--the ASCII character •).
Delete a character under the cursor	Delete
Erase a character to the left of the cursor	Backspace
Move cursor up one line	Up arrow key
Move cursor down one line	Down arrow key
Move cursor left one character	Left arrow key
Move cursor right one character	Right arrow key
Move cursor left one word	Ctrl - left arrow
Move cursor right one word	Ctrl - right arrow
Move to the beginning of the line	Home
Move to the end of the line	End
Move to the beginning of the file	Ctrl - home
Move to the end of the file	Ctrl - end
Move to the beginning of a window	Home twice
Move to the end of a window	End twice
Scroll text up one window	PgUp
Scroll text down one window	PgDn
Scroll up one line without moving cursor	Ctrl - PgUp
Scroll down one line without moving cursor	Ctrl - PgDn

To Edit Text Using the Mouse:

You can use the mouse to reposition the cursor by pointing and clicking.

The Edit pull-down menu below provides commands for editing text.



Cutting, Copying and Pasting

Cutting, copying, and pasting text involves the use of the Clipboard. The Clipboard is a temporary storage area where cut and copied text is placed and pasted from. Once on the Clipboard, text can be edited using the Clipboard application (see the Clipboard chapter for more information). Text placed on the Clipboard can be pasted into a different place in the same Notepad, into a different Notepad, into other PC Tools Desktop applications, and into underlying applications if you are running PC Tools Desktop resident.

Before you can cut or copy text, you must first mark the text to be cut or copied. The marked text will appear highlighted in the window.

Note: The Clipboard is limited to 2K, which is approximately 40-50 lines of text. If you try to cut or copy to the Clipboard more text than the Clipboard will hold, you will receive a warning message.

Mark Block

1. Place the cursor where you want the block to start.
2. Choose **Mark block** from the Edit menu.
3. Use the Up, Down, Left and Right arrow keys to mark the block.
   The selected text is highlighted.
   or
1. Place the cursor where you want the block to start.
2. Hold down the Shift key, then press the arrow keys to mark the block.
   (You can use either the keypad arrow keys or the cursor arrow keys.)
   The selected text is highlighted.
   or
   Place the mouse pointer where you want the block to start. Hold down the left mouse button and move the mouse to mark the block. Release the left mouse button at the end of the desired selection.
   The selected text is highlighted.

Note: If you try to move beyond the top or bottom of the screen when marking text, the text on the screen scrolls and is marked. Pressing and holding down the right mouse button while dragging will scroll the screen instead of marking the text.

Cut to Clipboard

When you cut text from a Notepad window, the text is cut, or removed, from the file and placed on the Clipboard, **replacing** any text currently on the Clipboard.

1. Mark the block of text you want to cut.
2. Choose **Cut to Clipboard** from the Edit menu.
   or
   Press the short cut keys Shift - Del.

Copy to Clipboard

Like the **Cut To Clipboard** command, the **Copy To Clipboard** command copies the marked text from your file to the Clipboard, but does not remove it from the file.

1. Mark the block of text you want to copy.
2. Choose **Copy to Clipboard** from the Edit menu.

Paste from Clipboard

When you paste from the Clipboard, the contents of the Clipboard are copied to the Notepad file where you have placed the cursor, and the Clipboard remains unchanged.

1. Place the cursor where you want to paste the contents of the Clipboard.
2. Choose **Paste from Clipboard** from the Edit menu.
   or
   Press the short cut keys Shift - Ins.

Unmark Block

If you decide that the block of text you've marked is incorrect, you can unmark it.

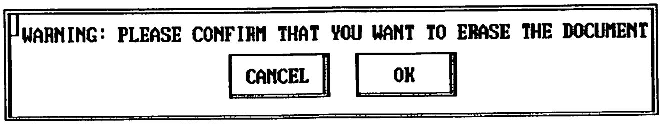
Short Cut

- Press Esc to quickly unmark a marked block.
  or
- Choose **Unmark block** from the Edit menu.
  or
- Use the Up, Down, Left, and Right arrow keys to move the cursor.
  or
- Click the left mouse button anywhere in the window.
  The highlighting goes away.

Delete All Text

The **Delete all text** command deletes all of the text in a Notepad file, but does not delete the file. The file remains open to the current Notepad, but will be empty.

1. Choose **Delete all text** from the Edit menu.
   A message box appears asking you to confirm that you want to erase all of the text.



WARNING: PLEASE CONFIRM THAT YOU WANT TO ERASE THE DOCUMENT

2. Select **OK** to erase the document.
   The text disappears and an empty Notepad window remains.

Insert File

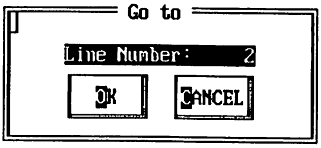
The **Insert file** command allows you to merge a selected file with the file you are working on.

1. In the current file, place the cursor at the location you want the file to be inserted.
2. Choose **Insert file** from the Edit menu.
   The File Load dialog box appears.
3. Select the file you want to insert using the File Load dialog box.
4. Select the **Load** button.
   The selected file is merged with the current file and inserted at the cursor position.

Goto

The line display on the Status line in the upper left corner of the Notepads window allows you to see which line the cursor is on. To move quickly through a file or to move to a particular line, use the **Goto** command.

1. Choose **Goto** from the Edit menu.
   The Goto line number dialog box is displayed.



Line Number: 2

2. Type the number of the line you want to go to.
3. Select **OK** to go to the specified line.
   The dialog box closes and the text and cursor are moved to the top of the Notepad window.

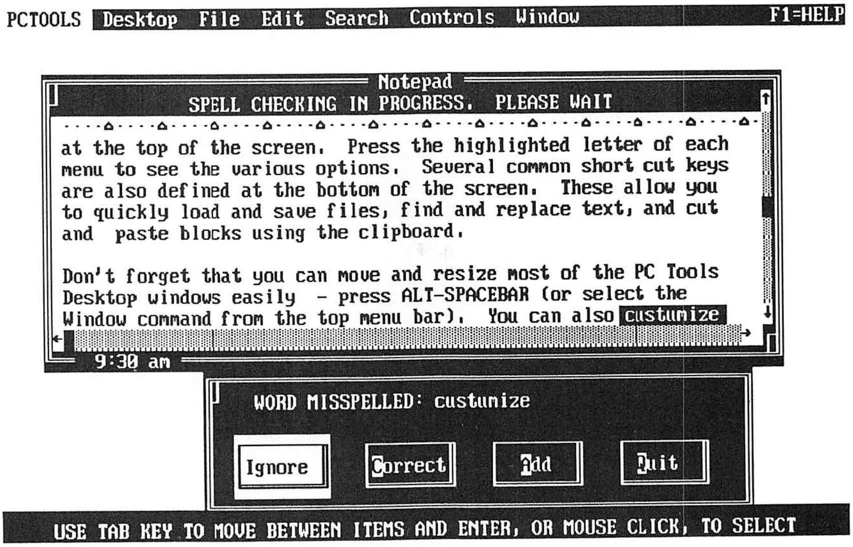
Checking Spelling

Use the Spelling commands (**Spellcheck Word, Spellcheck Screen, Spellcheck File**) to check the spelling in your Notepad files. If Notepads finds a word it does not recognize (it is not in the dictionary), it highlights the word in the document being checked and displays the word in the Spell Check dialog box. You can change the misspelled word, add it to the dictionary so it's not displayed again, or ignore it and continue checking spelling.

Notepads allows you to check the spelling of just one word, all of the text on the screen, or the entire file. A message is displayed under the top window border while the spelling check is in progress.

To Check your Spelling:

1. Choose any of the spelling commands from the Edit menu depending on what you want to check.
   While Notepads checks the spelling in the current screen or file, a message is displayed on the Status Line telling you the spelling check is in progress. If a word is not found in the dictionary, the word is displayed in the Spell Check dialog box and is highlighted in the Notepad.



SPELL CHECKING IN PROGRESS. PLEASE WAIT

at the top of the screen. Press the highlighted letter of each menu to see the various options. Several common short cut keys are also defined at the bottom of the screen. These allow you to quickly load and save files, find and replace text, and cut and paste blocks using the clipboard.

Don't forget that you can move and resize most of the PC Tools Desktop windows easily - press ALT-SPACEBAR (or select the Window command from the top menu bar). You can also custumize

WORD MISSPELLED: custumize

USE TAB KEY TO MOVE BETWEEN ITEMS AND ENTER, OR MOUSE CLICK, TO SELECT

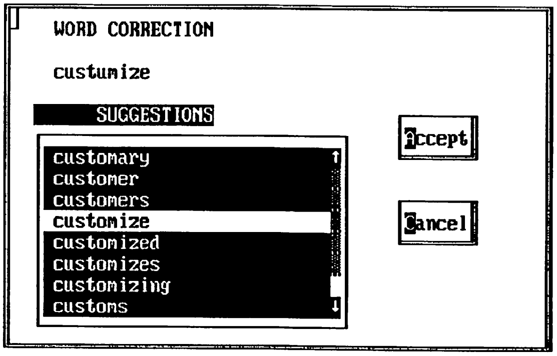
2. Select any of the following **Spell Check** options:

   Ignore: leaves the word as it is and continues the spelling check. Closing the dialog box also continues the spelling check. Any further occurrences of the same word are also ignored.

   Add: adds the word to the dictionary and continues the spelling check. Any words added to the dictionary are treated as correctly spelled words in the future. Once you have added a word to the dictionary, you cannot delete it, so make sure you have spelled it correctly.

   Quit: leaves the word as it is, closes the dialog box and cancels the spelling check.

   Correct: displays the Word Correction dialog box shown below.



3. To change the word, type a replacement in the text box and select the **Accept** button.
   or
   Select a suggested spelling from the list in one of the following ways:

Keyboard

Scroll through the suggested spellings list with the Up and Down arrow keys and press Enter to select the word you want, then press Enter again to accept the selected word. The word is changed and the spelling check continues.

or

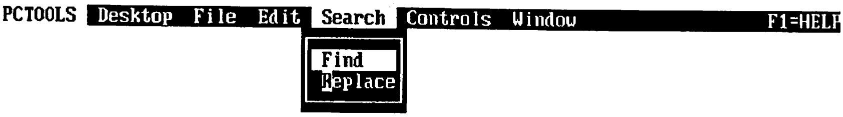
Mouse

Scroll through the suggested spellings list using the mouse in the scroll bar and double-click on the word you want, then click the Accept button to change the word. The word is changed and the spelling check continues.

Selecting the **Cancel** button or closing the dialog box ignores the misspelled word and returns you to the previous dialog box.

Searching in Notepads

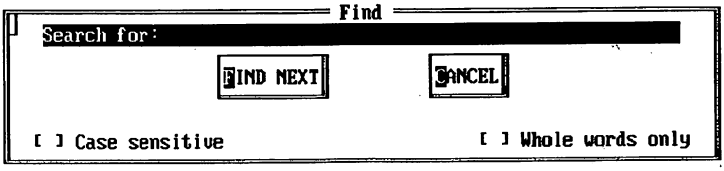
While editing, you can use commands in the Search menu to find, change, or replace specified text.



Find

The **Find** command searches through your file to find specified text. Beginning at the cursor, Notepads searches the file for the specified text and stops, with the cursor positioned at the beginning of the string. You can specify a string up to 44 characters.

1. Choose **Find** from the Search menu.
   The Find dialog box is displayed.



2. Type the character string you want to find in the Search for text box.
3. Select any of the following **Find** options:

   Case sensitive: finds only the specified uppercase and lowercase characters. With this option turned off, text is found regardless of its capitalization.

   Whole words only: finds whole words only, not partial words. For example, if searching for "the," Notepads will only find "the," not "theater."

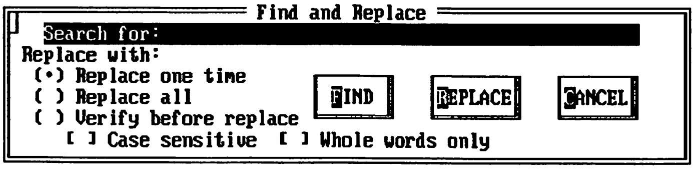
4. Select the **Find Next** command button.
   Notepads searches the file for the specified text and stops, with the cursor positioned at the beginning of the string.

   The dialog box is displayed until you close it or until the last occurrence of the search text is found.

Replace

The **Replace** command searches the file for a specified character string and replaces it with text you specify. You can specify a character string up to 44 characters. With the **Replace** command, you can either review each occurrence of the string and decide whether or not to change it, or replace all occurrences of the text automatically.

1. Choose **Replace** from the Search menu.
   The Replace dialog box is displayed.



Find and Replace

Search for:

Replace with:

(•) Replace one time

( ) Replace all

( ) Verify before replace

[ ] Case sensitive [ ] Whole words only

2. Type the text you want to replace in the Search For text box.
3. Type the replacement text in the Replace With text box.
4. Select any of the following Replace options:

   Replace one time: finds and replaces the next occurrence of the search text.

   Replace All: replaces all the occurrences of the found text with the specified text from the cursor position to the end of the file.

   Verify before replace: searches text from the cursor position to the end of the file, stopping at each occurrence of the word and replacing found text only when you press Enter. If you press Esc, the command is canceled; pressing the spacebar skips the specified text.

   Case sensitive: finds only the specified uppercase and lowercase characters. With this option turned off, text is found regardless of its capitalization.

   Whole words only: finds whole words only, not partial words.

5. Select one of the **Replace** command buttons:

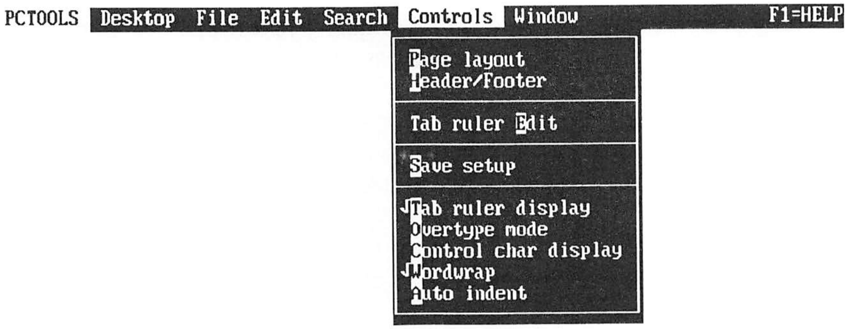
   Find: finds the text, without carrying out any changes.

   Replace: replaces the found text with the specified text.

The dialog box is displayed until you close it, until the search and replace is finished, or if you choose the **Cancel** option.

Setting Document Controls

When you first start Notepads there are default document settings: margins and headers/footers for printing; tabs, wordwrap, and indents for editing controls. As you start working with a Notepad file, you may want to change some or all of these default settings using the Controls menu commands. Whenever you turn a setting ON, a checkmark appears to the left of the command name on the pull-down menu. When the setting is OFF, no checkmark will appear.



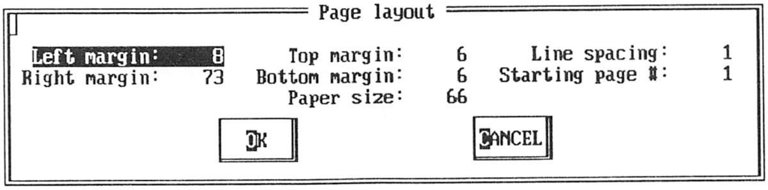
Formatting the Page for Printing

Before you print your Notepad file, you can change the margins, set line spacing options, and create headers or footers with automatic page numbering. Even though you make these additions to your file, you won't be able to see them until you print the file or choose the **Disk File** option in the Print command's dialog box.

When you save a file using PC Tools format (the default option), the position, size, and window colors are saved. The next time the file is opened, it will have the same window attributes. If you save files as ASCII, these formatting changes will not be preserved.

Page Layout

1. Choose **Page layout** from the Controls menu.
   The Page layout dialog box appears.



Left margin: 8
Right margin: 73
Top margin: 6
Bottom margin: 6
Paper size: 66
Line spacing: 1
Starting page #: 1

2. Select any of the following Page layout options:

   Margins: sets the amount of blank space between the edges of the paper and your text. The current default settings are the following:

left margin 8 spaces; right margin 73 spaces (from left edge of page); top margin 6 lines; and bottom margin 6 lines. If you want to change the margins, type a new number in the appropriate text box.

Many printers have left margin settings, so you may need to print a sample document and make any necessary margin adjustments.

Paper size: allows you to specify the paper size you are using to print your file. The default setting is 66 lines, which corresponds to an 8.5" x 11" sheet of paper. If you are using legal size paper (8.5" x 14"), you need to change the Paper size setting to 84 lines. These values assume your printer is set for 6 lines per inch. If your printer is set for another value, you need to change the settings.

Line spacing: specifies whether you want to single space or double space your text.

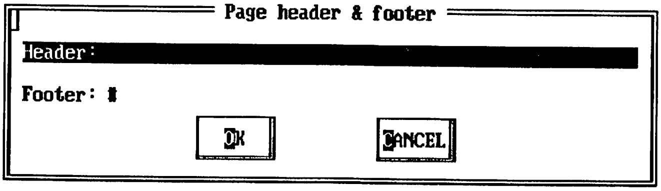
Starting page #: specifies the number that Notepads will use as the first page of your text. Subsequent pages will be numbered from this starting point.

3. Select **OK** to set the page layout options.
   The dialog box closes.

Header/Footer

A header is text printed in the top margin on every page of your Notepad document, and a footer appears in the bottom margin. You will not see the headers and footers on the screen unless you choose the **Disk File** button in the Print dialog box and load the .PRT file, but they will appear when the file is printed. Headers and Footers are centered with the margins you specify. All Header/Footer selections are saved when you select the PC Tools Desktop file format option in the Save dialog box.

1. Choose **Header/Footer** from the Controls menu.
   The Header/Footer dialog box is displayed.



Header:

Footer: #

2. Type the header and footer text in the text boxes. You can type up to 50 characters in the text boxes.

   The pound character (#) in the footer text box represents automatic page numbering and starts at page 1 by default. If you want page numbers included in the header, you must type the pound character in the Header text box. Delete the pound character if you do not want page numbers.

   To change the starting page number, you need to change the Starting Page # option in the Page Layout dialog box.

3. Select **OK** to save your Header/Footer selections and close the dialog box.

Save Setup

With Save Setup you can save all the selections you've made in the Controls and Windows menus. For example, if you usually use the same settings for margins, headers/footers, wordwrap, overtype, windows colors, etc., you can choose the Save Setup command so that every time you open a new Notepad, you don't need to make any changes.

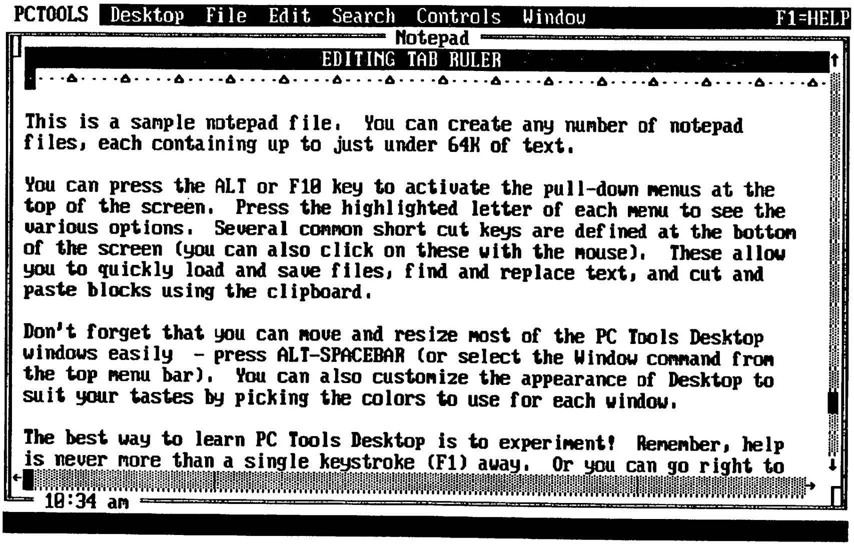
Save Setup enables you to save window settings for the current Notepad, while the options for printing and formatting on the Controls menu are globally saved for *all* four Desktop applications that use printing (Notepads, Outlines, the Macro Editor and Databases). Unless you choose Save Setup, other commands you choose on the Controls and Windows menu affect only the current file.

Setting Edit Controls

To control the appearance of the text as you edit, you can turn on or off such options as the tab ruler display, automatic indent, overtype mode, wordwrap and control characters display. All editing controls are saved when you select the PC Tools Desktop file format option in the Save dialog box.

To Edit Tab Stops:

To position text horizontally, it is better to set a tab stop instead of adding spaces with the spacebar. To set or change tab stops, make sure the tab ruler setting is ON so that the tab ruler is displayed across the top of the Notepad window. While you are editing tabs, a message appears in the Status line.



This is a sample notepad file. You can create any number of notepad files, each containing up to just under 64K of text.

You can press the ALT or F10 key to activate the pull-down menus at the top of the screen. Press the highlighted letter of each menu to see the various options. Several common short cut keys are defined at the bottom of the screen (you can also click on these with the mouse). These allow you to quickly load and save files, find and replace text, and cut and paste blocks using the clipboard.

Don't forget that you can move and resize most of the PC Tools Desktop windows easily - press ALT-SPACEBAR (or select the Window command from the top menu bar). You can also customize the appearance of Desktop to suit your tastes by picking the colors to use for each window.

The best way to learn PC Tools Desktop is to experiment! Remember, help is never more than a single keystroke (F1) away. Or you can go right to

Tab Ruler Display

The tab ruler is displayed across the top of the Notepad window and is used to determine where to place tabs. You can toggle the tab ruler display setting on or off; it is ON by default.

- Choose **Tab Ruler display** from the Controls menu.

Tab Ruler Edit

Make sure the tab ruler display setting on the Controls menu is ON.

1. Choose **Tab Ruler Edit** from the Controls menu.
   The cursor is positioned on the tab ruler.
2. Use the Left and Right arrow keys to position the cursor on the tab ruler to where you want a tab stop. You can also use the Tab or the End key to move forward and the Shift - Tab or Home keys to move backward on the tab ruler.
3. Press the Ins key to set a tab.
4. Press Esc to resume working.

To Quickly Set Evenly Spaced Tabs:

Make sure the tab ruler setting on the Controls menu is ON.

1. Choose **Tab Ruler Edit** from the Controls menu.
   The cursor is positioned on the tab ruler.
2. Enter any number between 3 and 29 to represent the number of spaces between the tab stops.
   The default spacing between tabs is 5.
3. Press Esc to resume working.

To Delete a Tab:

Make sure the tab ruler setting on the Controls menu is ON.

1. Choose **Tab ruler edit** from the Controls menu.
   The cursor is positioned on the tab ruler.
2. Use the Left and Right arrow keys to move the cursor to the tab you want to delete. You can also use the Tab or the End key to move forward and the Shift - Tab or Home keys to move backward on the tab ruler.
3. Press the Del key to remove the tab stop.
4. Press Esc to resume working.

Overtype Mode

With **Overtype** mode on, anything you type automatically types over, or replaces, the text at the cursor. With overtype mode off, Notepads is in insert mode and anything you type is inserted at the cursor. When Notepads is in insert mode "INS" will appear to the right of the file name in the Notepad window.

- Choose **Overtype** from the Controls menu to toggle this setting on or off.
  or
- Press the Ins key to toggle this setting on or off.

Control Char Display

With **Control Character Display** turned on, Notepads displays the carriage return, tab, and space characters in the text so you can see exact positioning.

- Choose **Control char display** from the Controls menu to toggle the setting on or off.

Wordwrap

With **Wordwrap** turned on, you don't need to press enter at the end of each line; your text automatically goes to the next line when you reach the right margin. If a word is incomplete at the end of the line, it moves to the next line. Wordwrap occurs just short of the scroll bar in the window, but for printing, the text is wordwrapped as defined by the **Page Layout** command. If you have wordwrap turned off, you will be able to scroll through your file horizontally by pressing the right mouse button and dragging the mouse to the right or left sides of the window.

- Choose **Wordwrap** from the Controls menu to toggle this setting on or off.

Auto Indent

With **Auto-indent** turned on, text is automatically indented to line up with the first character of the previous line. This is useful if you want to indent a paragraph but don't want to press the Tab key at the beginning of each line.

- Choose **Auto-indent** from the Controls menu to toggle this setting on or off.

Outlines

An outline is a useful tool for creating a list of organized ideas. Outlines consist of lines of text, with each line representing a main point, or headline, followed by more specific subheadings. Using word processing capabilities, you can create and edit an outline for a speech or prepare an agenda for a meeting, for example. You can also use the Outlines window to create the skeleton for a presentation that you can fully flesh out in Notepads.

The advantage of an outlining program over word processing, though, is that each line of text represents levels of the outline. Level 1 is more important than Level 2, which is more important than Level 3, and so on. You can hide selected levels of headlines to see just the main ideas in Level 1, for example, to get an overview of your main points. Or you can expand the minor points in Level 3, for example, to scrutinize those details.

Using Outlines to prepare a document can save time because you perform the following tasks:

- Structure information
- Select parts of the outline for adjustment
- View selected parts of the outline by collapsing and expanding text under each headline
- Reorganize the outline with a few keystrokes
- Print the outline

Since you have the option of running PC Tools Desktop memory-resident, Outlines can be available at all times once you have loaded PC Tools Desktop. You can have instant access to outlining with as many as 15 windows at once without leaving the current application.

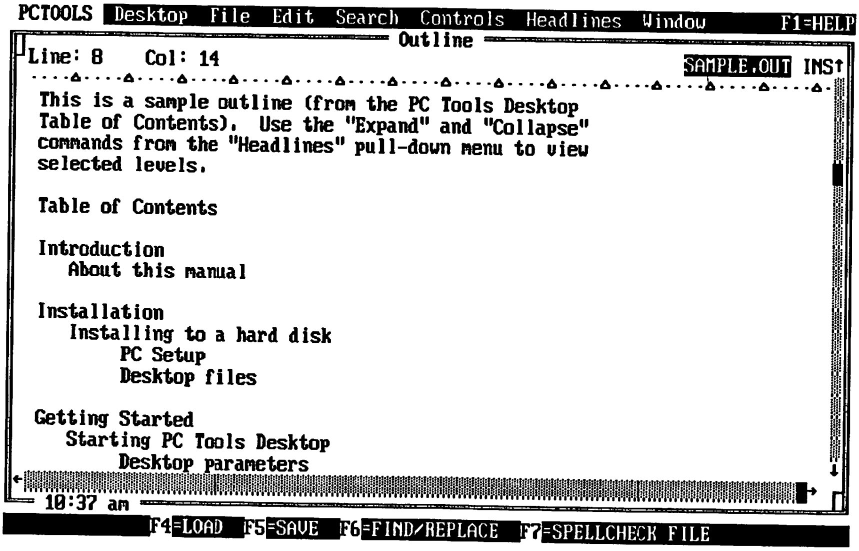
This chapter assumes you already know how to edit using the commands on the Notepads File, Edit, Search, and Controls menus (the commands are the same in Outlines). If you don't already know how to use the Notepads editing functions on these menus, turn to the Notepads chapter.

Starting Outlines

Once **Outlines** is chosen from the Desktop pull-down menu, the File Load dialog box appears. See the "Getting Started" chapter for information on using the File Load dialog box.

After an Outlines file has been loaded or created, the Outlines window (shown below) is displayed.

Note: You can display as many as 15 Outlines simultaneously by choosing **Outlines** again from the Desktop pull-down menu.



```
Line: 8    Col: 14

This is a sample outline (from the PC Tools Desktop
Table of Contents). Use the "Expand" and "Collapse"
commands from the "Headlines" pull-down menu to view
selected levels.

Table of Contents

Introduction
   About this manual

Installation
   Installing to a hard disk
        PC Setup
        Desktop files

Getting Started
   Starting PC Tools Desktop
        Desktop parameters
```

From top to bottom, the Outlines screen contains the following parts:

- **Outlines Horizontal Menu bar:** contains the names of pull-down menus and on-line Help for quick answers and guidelines.
- **Window border:** indicates the active window with a double border. The inactive window has a single border. The time is also displayed on the lower left corner of the active window's border.
- **Outline window:** contains the text of the file you're working with.
- **Close box:** used with the mouse to close a window.

- **Status line:** shows what line and column the cursor is on, the file name, and whether you are in insert or overtype mode. When INS does not appear in the upper-right corner of the window, you are in overtype mode. Also displays additional information, like Spelling in progress.
- **Tab ruler:** sets and changes tab stops if the Tab Ruler display is on.
- **Selection bar:** blank space in the first column used with the mouse to select a line of text.
- **Scroll bars:** used with the mouse to move, or "scroll" through the file.
- **Resize box:** used with the mouse to resize the window.
- **Message bar:** contains messages to guide you through your work. When you open Outlines, the short cut keys are displayed. You can select any of these commands by pressing the highlighted function key or positioning the mouse cursor on any portion of the command or highlighted key and clicking the mouse. For example, to save your document just press F5 or click anyplace on "F5=SAVE" with the mouse; this brings up the Save dialog box.

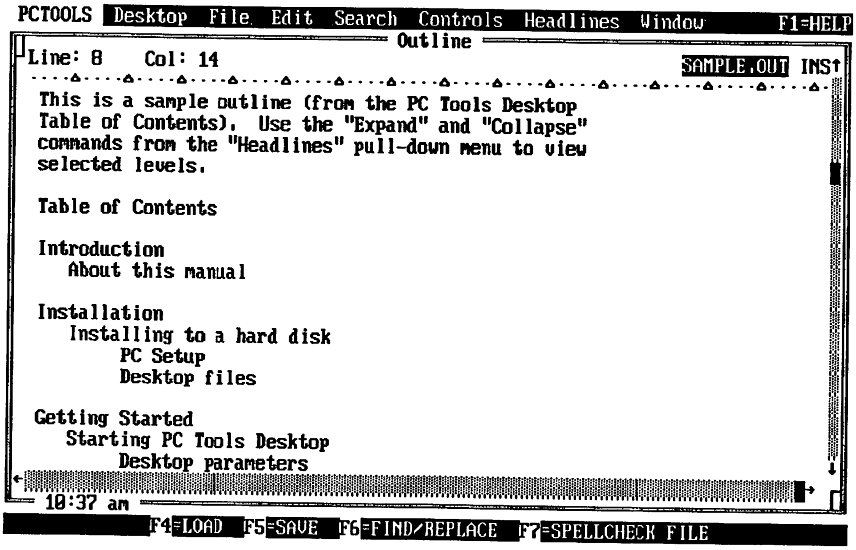
Creating an Outline

Outlines are organized according to topic or heading levels, each level distinguished from the others by amount of indention. The main headline, or Level 1, appears near the left margin; Level 2 headlines are indented to the first tab setting, Level 3 headlines are indented to the next tab setting, and so on. The indention is based upon the tabs you set; however, you can use the PC Tools Desktop default tab settings of 5 spaces.

Creating an outline can be done in a variety of ways. You can enter all the Level 1 headlines first, without switching between headline levels, then go back and insert the Level 2 headlines, or you can type in the entire outline and then establish levels afterwards. If you want, you can have multiple Level 1 headings.

Since tabs are used to establish headline levels, do not use tabs in the text of the outline.

The illustration below shows you what the outline looks like:



```
This is a sample outline (from the PC Tools Desktop
Table of Contents). Use the "Expand" and "Collapse"
commands from the "Headlines" pull-down menu to view
selected levels.

Table of Contents

Introduction
   About this manual

Installation
   Installing to a hard disk
        PC Setup
        Desktop files

Getting Started
   Starting PC Tools Desktop
        Desktop parameters
```

To Establish Headline Levels:

- Press the Tab key to establish headline levels as you create an outline. Once the level has been established, you can type or edit text as you normally do.
- When you finish a headline, press Enter; the cursor stays at the same topic level.

To Change Levels:

- Press the Backspace key to promote the current headline or the Tab key to demote the current headline. (Menu options are also available for promoting and demoting headline levels.)

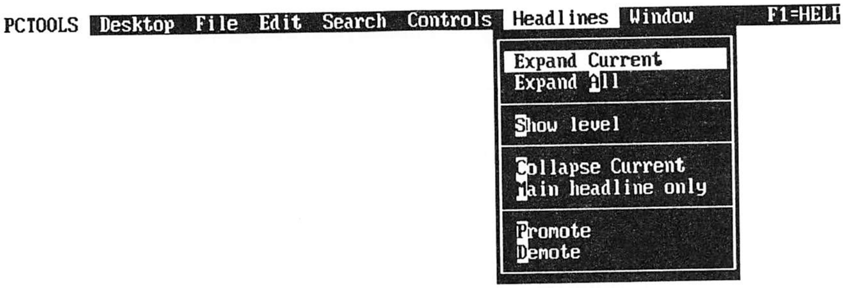
To Insert Levels:

You can insert new levels between existing ones the way you insert new text.

- Move the cursor to the end of the line above where you want to insert the new line and press Enter. The cursor moves to the beginning of the same level headline as the one above it.

Working with Headlines

The most useful feature of an outlining application is that it allows you to move quickly around in the outline. You can promote and demote heading levels and collapse and expand sections of the outline for work on specific sections of your document. The symbol ➤ indicates deeper levels of headlines are underneath. The Headlines menu contains the following commands:



Expanding Text

When you want to see more levels of an outline, to get the big picture, you need to expand the text so that all hidden text is displayed. You can expand the current level only, all Level 1, or 2 headings, for example, or you can expand the entire outline for viewing.

Expand Current

This command displays all the headlines below the headline the cursor is on, if there are any.

- Choose **Expand Current** from the Headlines menu.
  The headlines below the current headline are displayed.

Expand All

If you want to expand all levels of collapsed headings, use the **Expand All** command.

- Choose **Expand All** from the Headlines menu.
  All hidden text is displayed.

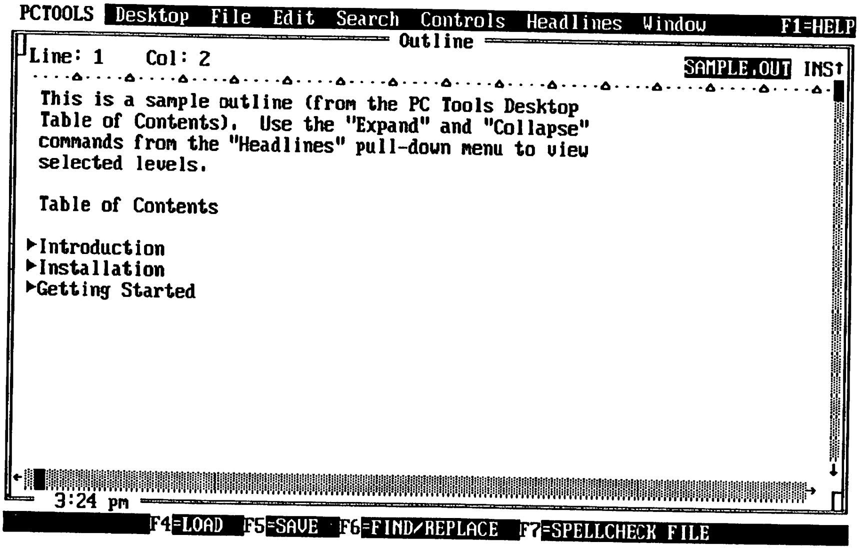
Showing Levels

The **Show Level** command collapses and expands one or more headline levels for the entire outline. You might want to distribute simplified versions of your outline to your colleagues for comments (up to Level 3, for example) while keeping a complete version for yourself. For example, if your cursor is on Level 3, the outline displays Levels 1, 2, and 3, and lower level headlines are collapsed. Since hidden text is not printed, you can use **Show Level** to create a simplified outline for others.

Use **Show Level** to display the headlines at the same level the cursor is on in the entire outline and hide any headlines below the specified level. If your cursor is on a headline Level 3, for example, and you want to see headline Levels 1 through 3 in the outline, using **Show Level** will hide all Level 4 and 5 headlines.

Show Level

1. Place the cursor anywhere in the heading.
2. Choose **Show Level** from the Headlines menu.
   All text under the specified level in the outline is hidden and the symbol shown below is placed next to the headline to indicate hidden text.



```
This is a sample outline (from the PC Tools Desktop
Table of Contents). Use the "Expand" and "Collapse"
commands from the "Headlines" pull-down menu to view
selected levels.

Table of Contents

▸Introduction
▸Installation
▸Getting Started
```

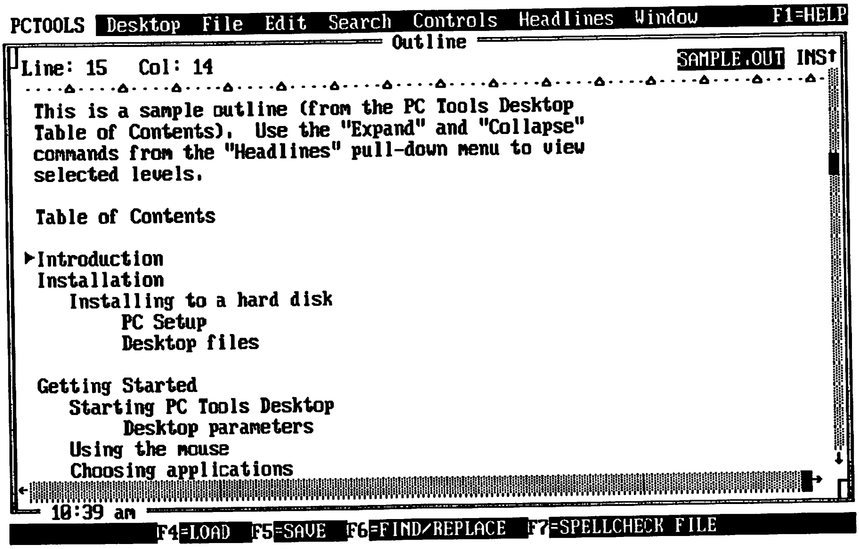
Collapsing Text

When you want to work on one section of your outline, to fill in minor points and details, you can make all the other levels of your outline go away by collapsing text. You can collapse the current level only, or you can collapse everything but the main headlines.

Collapse Current

This command hides the levels of headlines below the headline the cursor is on, if there are any. You can compress the outline to higher and higher levels.

- Choose **Collapse Current** from the Headlines menu.
  The headlines below the current headline are collapsed, and a symbol (shown below) appears next to the headline indicating hidden text.



```
Line: 15   Col: 14

 This is a sample outline (from the PC Tools Desktop
 Table of Contents).  Use the "Expand" and "Collapse"
 commands from the "Headlines" pull-down menu to view
 selected levels.

 Table of Contents

▸Introduction
 Installation
    Installing to a hard disk
         PC Setup
         Desktop files

 Getting Started
    Starting PC Tools Desktop
         Desktop parameters
    Using the mouse
    Choosing applications

10:39 am
```

Main Headline Only

If you want to see the main ideas of your outline and hide all subheadings for a document, use the **Main headlines only** command.

- Choose **Main headlines only** from the Headlines menu.
  All text under the first level headings is hidden.

Promoting and Demoting Text

One of the most versatile features of an outlining application is its ability to let you quickly move levels of your outline. If you decide you want more details at a particular level of your outline, or you want to delete some details, or move details at Level 2 to Level 4, for example, you can quickly make changes with **Promote** and **Demote** commands.

Promote

Use the Promote command to move a heading to a higher level.

1. Place the cursor anyplace in the heading you want to promote.
2. Choose **Promote** from the Headlines menu.
   The heading is promoted, and all subheadings are repositioned accordingly.

Demote

Use the Demote command to move a heading to a lower level.

1. Place the cursor anyplace in the heading you want to demote.
2. Choose **Demote** from the Headlines menu.
   The heading is demoted, and all subheadings are repositioned.

Databases

Databases offer a means of organizing, storing, and managing information. As an essential business tool, databases take many forms. You probably take care of your personal business with databases such as checkbooks, address books, and phone books. Storing information in a database makes finding what you need and sorting the information easy and fast.

Computer-based databases are particularly powerful because they are so fast and flexible. The Databases application in PC Tools Desktop has many of the powerful features found in stand-alone database programs. With PC Tools Desktop, you can easily write a form letter to customers whose addresses are stored in a pre-existing dBase® database and send it to selected customers, without ever using dBase. You can also view the database another way, for example, as a customer list address file by designing a form that displays the data in the form of a customer list.

PC Tools Desktop Databases have the following features:

- dBase compatible database files
- Customized display forms created with the Notepad application
- Automatic phone dialing

Since PC Tools Desktop can run as a memory resident program, you can bring up a database while working on any other application to have instant access to names, addresses, phone numbers, or anything else you have stored in your database. Also, since you can have as many as 15 windows open in PC Tools Desktop, you can have several databases open at once, or have open databases along with other applications. For example, while displaying a database, you can use Notepads to modify the form file which lets you view the database in different ways.

Understanding Databases

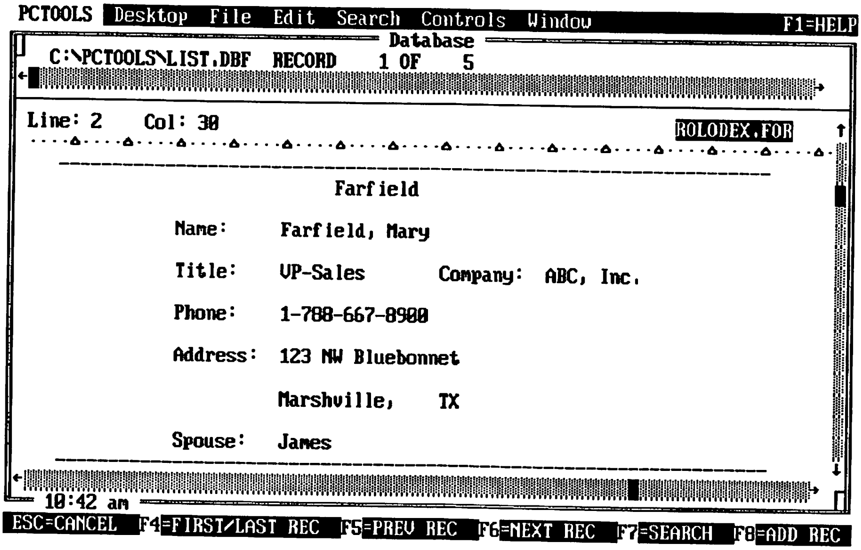
To understand a database, you need to understand how information is stored. Learning and using a database is much easier if you understand these concepts:

- Records and fields
- PC Tools Desktop database files
- The database structure

In a database, you put individual pieces of information into fields which are parts of a record. Related records make up a file. If you are already familiar with these concepts and with using a database, go to "Creating a New Database" or "Using Existing Database Files."

Records and Fields

One example of a database is the customer list file shown below. Each window display is one record in the database containing all the related fields for one entry: a name, address, city, state, zip code, and telephone number, etc. Each entry is a field; for example, the address is one field in a record. Each database file, then, consists of a collection of related records.



C:\PCTOOLS\LIST.DBF RECORD 1 OF 5

Line: 2 Col: 30

ROLODEX.FOR

Farfield

Name: Farfield, Mary

Title: VP-Sales Company: ABC, Inc.

Phone: 1-708-667-8900

Address: 123 NW Bluebonnet

Marshville, TX

Spouse: James

10:42 am

PC Tools Desktop Database Files

Each PC Tools Desktop database has three files associated with it: Database files (with .DBF extensions), Records files (with .REC extensions), and Form files (with .FOR extensions). The extensions must be used for Databases to function correctly, and .REC and .DBF files must have the same file name.

PC Tools Desktop Databases have the following file limits:

- 4000 characters per record
- 128 fields per record

- 3500 records per database

Database files (.DBF) are dBase compatible and maintain the field definitions of the database and the actual information contained in the records. If you load a dBase file exceeding PC Tools Desktop's database limits, PC Tools Desktop will cut off the database at 3500 records but allow you to perform all database functions except add records and pack the database (the Pack command permanently erases specified records). You can, however, copy records with compatible fields between existing dBase files and PC Tools Desktop database files.

Note: The 3500 record limit in PC Tools Desktop is for performance purposes; in the next release, this restriction will be lifted.

Record files (.REC) are automatically created by PC Tools Desktop to maintain information about how to display the database. For example, when you tell PC Tools Desktop to sort the database a certain way, the sort order is maintained in the file.

Note: The .REC files are not dBase compatible and are not needed or used by dBase.

Form files (.FOR) are standard Notepad files which enable you to display and print the information in a database in personally styled formats. If you don't want to create your own form, a default form file is created for you with the same file name as the database file, but with the .FOR extension.

The Database Structure

Before entering data into a database and using it, you need to plan its structure by naming the fields in a record, deciding the size of a field, and defining the field types. When you manipulate data, you use field names to recall and refer to data stored in those fields. For instance, you might use the field name ADDRESS to hold addresses, ZIP to hold Zip Codes, AGE to hold ages, and so on.

PC Tools Desktop supports four field types (character, numeric, logical, and date). Each field is defined according to the size and type of data it can store.

The field names, types and sizes to be used when you are creating your database are discussed below.

Note: Another field type, memo, is used in dBase files and is not supported in PC Tools Desktop, which means it will be ignored.

Field name: names the field. Example field names for the customer list database are FIRST_NAME, LAST_NAME, PHONE, ADDRESS, CITY, STATE, and ZIP.

Field size: specifies the maximum number of characters allowed in a field. By specifying the dimension of a data field, you reserve the necessary storage space for anticipated data items.

Field type: specifies what kind of data is allowed for each field. Field types are character, numeric, logical, or date. When you specify the field type, you dictate how the data in the field is to be used. If you define a field as numeric, the items stored in the field can be used in dBase formulas. Data stored in fields defined as character fields, on the other hand, can be used only as a label or as the object of search and sort operations. Character fields can never be included in a formula.

Creating a New Database

Once **Databases** is chosen from the Desktop pull-down menu, the File Load dialog box appears for you to specify the name of a database file (.DBF) to load. Only files with the .DBF extension are listed. You can select an existing database file to load or create a new file and build a new database. See the "Getting Started" chapter for information on using the File Load dialog box.

This section shows you how to perform the following:

- Define the structure of a new database
- Customize a new form file

Note: When you load an existing database, the database window appears, ready for you to add or edit records. See "Using existing database files" if you are working with an existing database.

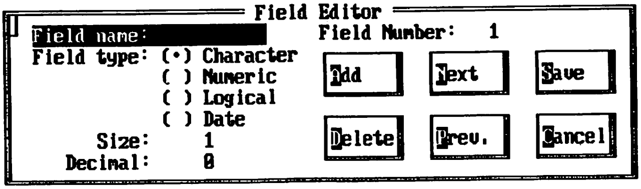
Defining the Structure of a New Database

When creating a new database, you first need to create a .DBF file to contain the database. Secondly, you need to specify the database structure by entering the field names, types, and sizes which make up the records.

Important: Character fields with 3 or more consecutive numbers (ignoring spaces, dashes, and parenthesis) are accepted as valid phone numbers when you use the autodialer. Therefore, it is recommended that you put phone number fields before any other fields containing numbers when you are defining your record structure. See the Autodialer section for more detail.

Entering a file name with a .DBF extension and choosing the New command button in the File Load dialog box creates a new file. The Field Editor dialog box shown below appears for you to define the fields for your new database.

Note: You can change field types and sizes while you are in the Field Editor dialog box, but once the dialog box is closed, you cannot change field types and sizes without creating a new database. You can, however, edit the field names.



Field name:
Field Number: 1
Field type: (•) Character
( ) Numeric
( ) Logical
( ) Date
Size: 1
Decimal: 0

The parts of the Field Editor dialog box are explained below:

Field Name text box: where you enter the name you want to assign a field. Legal characters are letters, the underscore character (_), ASCII graphics characters, and numbers. If you are creating a database to hold names and addresses, like the example customer list file, you might name a field FIRST_NAME. Field names can be no longer than 10 characters and must begin with a letter. Lower case letters are converted to upper case, and underscores are used to separate words. Blank field names are not allowed.

Field Type: where you select the type of data to be entered into a field. You can use four field types: character, numeric, logical, and date.

- **Character** fields consist of any letters (A-Z); numbers (0-9) that are used for identification (for example, telephone numbers, numbers in addresses, or social security numbers); special symbols (#, $, *, &); ASCII graphics characters (which you can insert by pressing the Alt key along with ASCII decimal equivalent; for example, pressing Alt-7 gives you a bullet, ASCII character •), and the underscore character (_).

  You can have 70 characters per field. Since dBase allows 254 characters, if you are copying records from dBase, any information longer than 70 characters in a character field will not be copied. The default character field is 1 character.

- **Numeric** fields consist of any number or value that is used in computations (for example, entries in a checkbook register or tax form). PC Tools Desktop does not perform computations on the database, but you can store values in numeric fields for use in dBase.

  Also considered part of a numeric field are a decimal point (.), a plus sign (+), and a minus sign (-) associated with a number. The + and - signs are optional at the beginning of the number, and the position of the decimal place is fixed once you have set it, which means if you enter too many digits after the decimal point, they are cut off. If you enter too few, zeros are entered for you. The fixed decimal position means that numeric fields displayed in columns will have decimal points aligned. You can have 19 characters per field. The default numeric field is 0.

- **Logical** fields consist of a single character representing a true or false condition. True is represented as T, t, Y, or y. False is represented as F, f, N, or n. A logical field can be used to divide the contents of a database file into two groups: one for which the condition is true and another for which the condition is false. For example, a doctor with a database of patient billing records can use T in the logical field to indicate the patient has paid and F to indicate the patient has not paid the bill. The default logical field is F.

- **Date** fields consist of eight characters that store numeric codes for the month, day, and year, in the following form: MM/DD/YY. Date fields assume the 20th century. The default date field is 00/00/00. Date fields are used only as dates in the data manipulation; they cannot be used in dBase formulas.

Size text box: where you specify the character length of a particular field. This size is determined by the longest item you plan to enter in that field. If the longest city in your database has 20 characters, for example, you need to specify the size of the CITY field as 20 even though some of the cities require fewer than 20 letters.

The size limits vary depending on field types: character fields allow up to 70 characters (default field size is set at 1 character); logical fields only allow one character, so the size is set at 1; and date fields always allow 8 characters, so the size is set at 8.

Although numeric fields allow up to 19 characters, the size is defined two ways. First define the maximum number of digits allowed in the value. Then determine the number of digits to appear to the right of the decimal point. The default is set at 1 with 0 for decimal. The decimal point counts as one character.

Decimal text box: where you specify how many decimal places are to be included to the right of the decimal point in numeric fields. For example, if you specify 3, every numeric value has three decimal places: 9.000, 4.987, and 0.988. When you add character, date, or logical fields, the decimal is set at 0.

Field Number: indicates the current field. You can move through the fields by selecting the **Next** and **Previous** buttons if you want to change fields before closing the dialog box.

Add: adds the current field definition to the database and automatically appends a new field if the field added was the last one in the database.

Next: selects the next field. This options enables you to move through the fields.

Save: saves all the added field definitions to the database and closes the dialog box. The field definitions are then displayed in the default form. You need to save the database structure before continuing and adding records to the database.

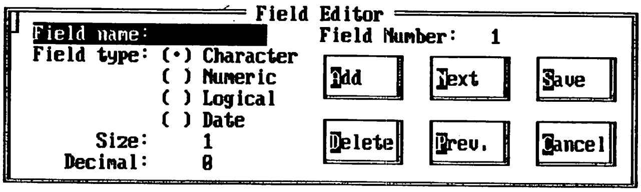
Delete: deletes the selected field. Use the Next and Previous buttons to move through and select fields.

Previous: selects the previous field. This options enables you to move backwards through the fields.

Cancel: cancels the database creation and returns you to the Desktop menu without saving the database. You can also cancel by clicking on the close box or pressing the Esc key.

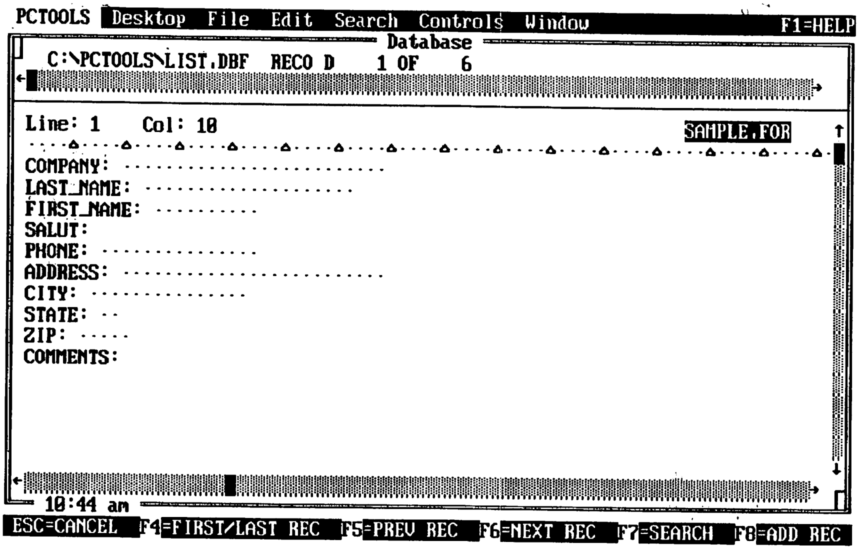
To Create a New Database:

Note: Character fields with 3 or more consecutive numbers (ignoring spaces, dashes, and parenthesis) are accepted as valid phone numbers when you use the autodialer. Therefore, it is recommended that you put phone number fields before any other fields containing numbers when you are defining your record structure. See the Autodialer section for more detail.



```
Field name:                     Field Number:  1
Field type: (•) Character
            ( ) Numeric
            ( ) Logical
            ( ) Date
      Size:     1
   Decimal:     0
```

1. Type the field name in the Field name text box.
   It doesn't matter if you type in upper case or lower case; Field Names are converted to upper case.
2. Select the Field type option button you want.
   The Field size default is set when the field is added. In the case of character and numeric field types, the Size text box can be selected and the size changed. When selecting numeric fields, you can also select the Decimal box to change the decimal position.
3. Select the **Add** command button.
   The field structure is created, and the text boxes appear empty again, ready for you to define the next field.
4. When finished adding fields, select the **Save** command button.
   The dialog box closes, and the default form file is loaded with an empty record displayed. Your field names are listed on the left margin in the database window. Next to the labels for field names are dotted lines which correspond to the size you assigned the field. When records are added, database record data replaces the dotted lines. See "Editing records and fields" for an explanation of how to add and edit records.



```
C:\PCTOOLS\LIST.DBF  RECO D   1 OF    6

Line: 1    Col: 10
COMPANY: ........................
LAST_NAME: ....................
FIRST_NAME: ..........
SALUT:
PHONE: ...............
ADDRESS: ........................
CITY: ...............
STATE: ..
ZIP: .....
COMMENTS:
```

From top to bottom, the Databases screen contains the following parts:

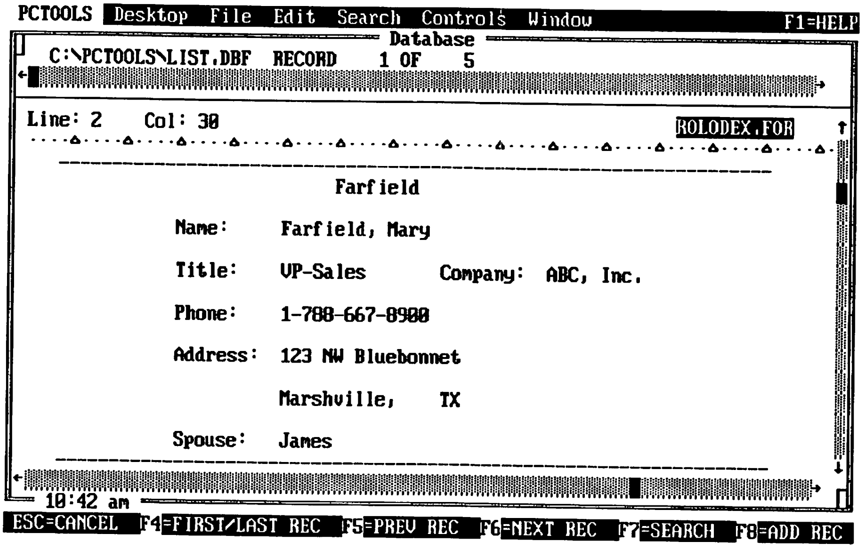
- **Databases Horizontal Menu bar:** contains the names of pull-down menus and on-line Help for quick answers and guidelines.
- **Window border:** indicates the active window with a double border. The inactive window has a single line border. The time is also displayed on the lower left corner of the active window's border.
- **Close box:** used with the mouse to close the window.
- **Database window:** displays one record at a time from the database file you are working on.
- **Title bar:** displays the database file name.
- **Record:** shows which record is currently displayed. You can display different records by scrolling through the records with the Records scroll bar, using the F4 - F7 keys, or by using the Goto record command from the Search menu.
- **Records scroll bar:** used with the mouse to scroll through and display the records.
- **Status line:** shows what line and column the cursor is on and the form file name associated with the database.
- **Tab ruler:** shows where the tabs have been set.
- **Default form display:** shows the labels, NAME, PHONE, and ADDRESS, followed by a colon, then field data.
- **Scroll bars:** used with the mouse to move, or "scroll," through the current record.
- **Resize box:** used with the mouse to resize the window.
- **Message bar:** contains messages to guide you through your work. When you open Databases the short cut keys are displayed. You can select any of the commands by pressing the highlighted function key or positioning the mouse cursor on any portion of the command or highlighted key and clicking the mouse. For example, to add a record just press F8 or click anyplace on "F8=ADD REC" with the mouse; this displays a new record.

Note: If you don't like the way data is displayed and want to create your own form see "Customizing a new form file." If you want to display your data using an existing form, see "Loading an existing form file."

Customizing a New Form File

A form file contains a description of how you want to display or print the contents of a database. Customized display forms are like fill-in-the-blank forms; when you design your form, you put field names in brackets [ ]. Like filling in a blank form, when you load your database records and display them in the form, the information from the database records replaces the field names on the form.

The following explanation uses examples of a customer list and a form letter to show you how the same database can be used with many form files. The customer list record below shows you how the database looks when you use a form that looks like a customer list.



C:\PCTOOLS\LIST.DBF RECORD 1 OF 5

Line: 2 Col: 30

Farfield

Name: Farfield, Mary

Title: VP-Sales Company: ABC, Inc.

Phone: 1-700-667-0900

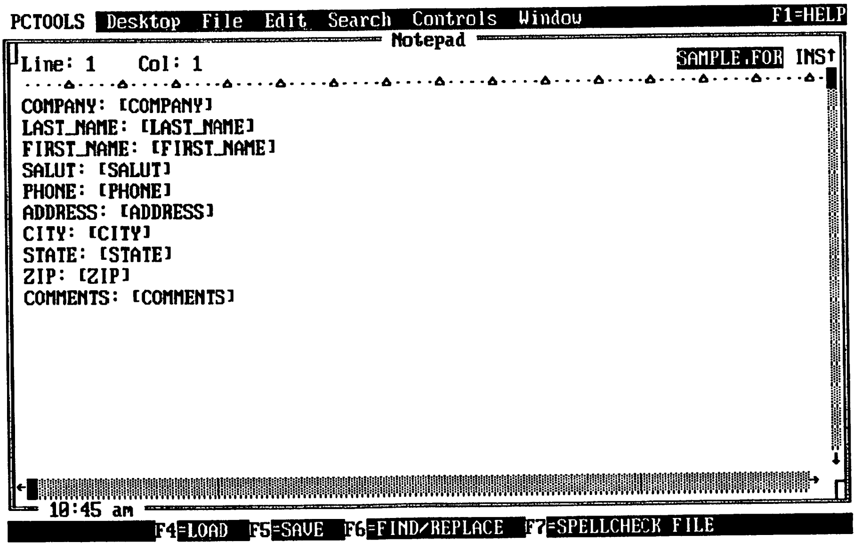
Address: 123 NW Bluebonnet

Marshville, TX

Spouse: James

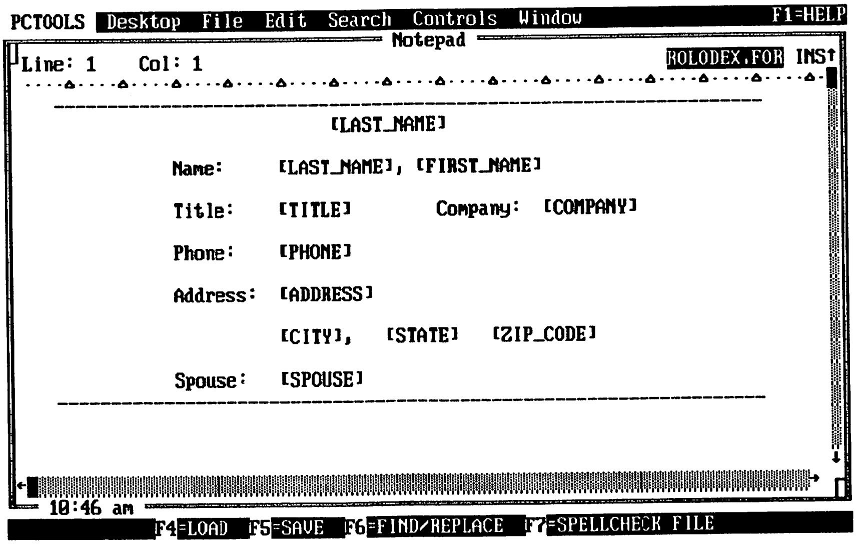
With PC Tools Desktop, you can customize your own form file or use the default form file to display your records. The default form file is automatically created for you when you create a new database and is given the same file name as the database, but with the .FOR extension. In the default form, all labels for fields in the database are listed in sequence followed by a colon and a space then the field names in brackets [ ]. The record data appears the same color as the ruler and status lines, so you can easily locate fields in a form. For most data entry and editing operations, the default form will be sufficient.

The illustration below shows you how the fields are displayed in the default form.


PCTOOLS Desktop File Edit Search Controls Window F1=HELP
Notepad
Line: 1 Col: 1
SAMPLE.FOR INS
10:45 am
F4=LOAD F5=SAVE F6=FIND/REPLACE F7=SPELLCHECK FILE

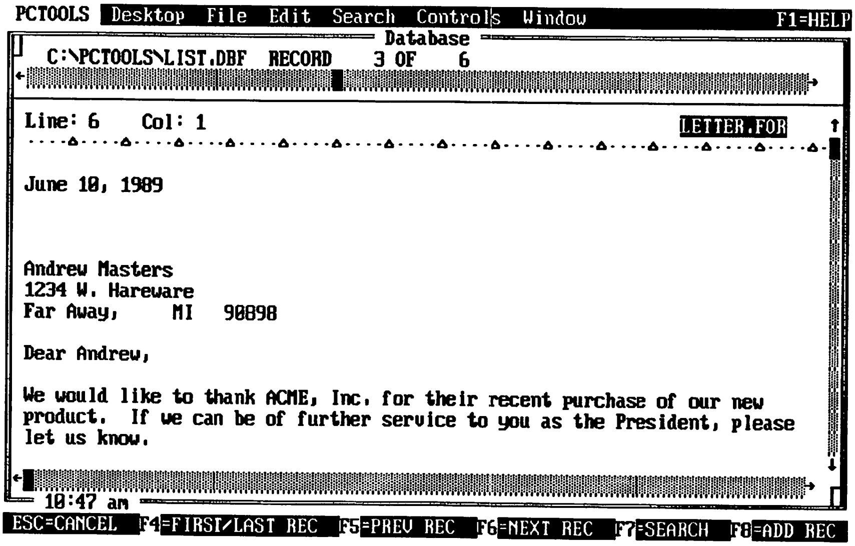
```
COMPANY: [COMPANY]
LAST_NAME: [LAST_NAME]
FIRST_NAME: [FIRST_NAME]
SALUT: [SALUT]
PHONE: [PHONE]
ADDRESS: [ADDRESS]
CITY: [CITY]
STATE: [STATE]
ZIP: [ZIP]
COMMENTS: [COMMENTS]
```

PC Tools Desktop offers you the flexibility of creating your own customized form files so you can display and print the data fields in your database in any number of formats. For example, the customer list form below displays the data from the database in one format.


PCTOOLS Desktop File Edit Search Controls Window F1=HELP
Notepad
Line: 1 Col: 1
ROLODEX.FOR INS
10:46 am
F4=LOAD F5=SAVE F6=FIND/REPLACE F7=SPELLCHECK FILE

```
---------------------------------------------------------------------
                          [LAST_NAME]

           Name:      [LAST_NAME], [FIRST_NAME]

           Title:     [TITLE]         Company:  [COMPANY]

           Phone:     [PHONE]

           Address:   [ADDRESS]

                      [CITY],    [STATE]    [ZIP_CODE]

           Spouse:    [SPOUSE]
---------------------------------------------------------------------
```

You can also write a form letter using field names from the same database in one or more places in the letter. Then when you load the form, the information contained in records in your database is inserted in the letter. You can print the letters and have them sent to customers whose names and address records are contained in the same database you displayed in the customer list form.



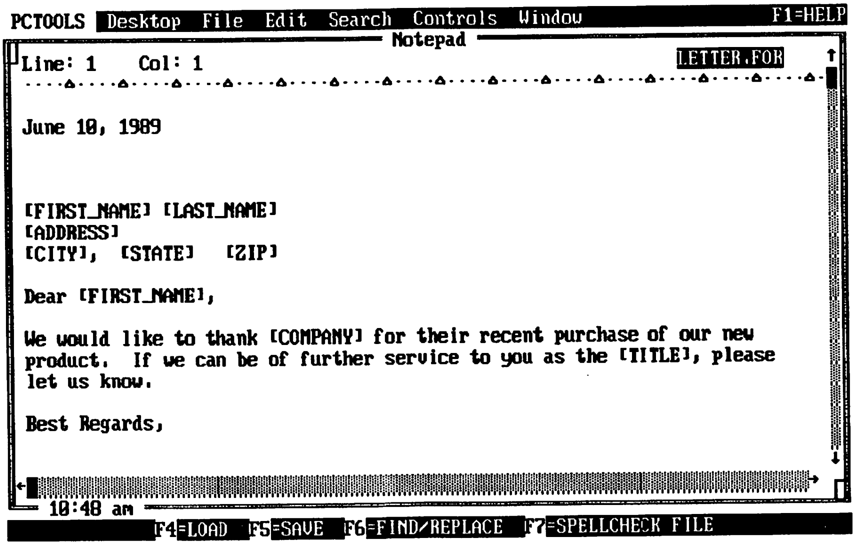
```
C:\PCTOOLS\LIST.DBF  RECORD    3 OF   6

Line: 6    Col: 1

June 10, 1989



Andrew Masters
1234 W. Hareware
Far Away,     MI   98898

Dear Andrew,

We would like to thank ACME, Inc. for their recent purchase of our new
product.  If we can be of further service to you as the President, please
let us know.
```

To Create a New Form:

Creating a new customized form is done using the Notepad application. You can place your field names anywhere in the file, move them around, and provide additional text.

1. Choose **Notepads** from the Desktop pull-down menu.
   The File Load dialog box appears.
2. Type a file name with a .FOR extension in the Filename text box. The file name needs to be a different name than the database file name.
3. Select the New command button.
   A blank Notepad window appears for you to write the text.
4. Write your text using the Notepad editing functions.
   All field names must be enclosed in brackets [ ]. When the form is used to display or print a record in the database, the field enclosed in brackets is replaced with data from the database. The field names in brackets must match the field names in the database or no record data will be retrieved and displayed in the form.

The illustration below shows the letter form as it looks in a Notepads editing window.



June 10, 1989

[FIRST_NAME] [LAST_NAME]
[ADDRESS]
[CITY], [STATE] [ZIP]

Dear [FIRST_NAME],

We would like to thank [COMPANY] for their recent purchase of our new product. If we can be of further service to you as the [TITLE], please let us know.

Best Regards,

5. Save and close the Notepad file.
   If you save the file as a PC Tools Desktop Notepad file, whatever document control settings you choose, such as automatic indent, wordwrap, and tab positions, and page layout for printing remain set when you load the form into Databases. If the form file is saved as an ASCII file, the tab information will be the same as in the Notepad, and the color, size, and placement information will be contained in the .REC file, so what you see won't change.

To place text or fields in specific positions on the form, use a Tab. Tabs bind text to them so that even if the record data for a particular field is shorter or longer than the actual field name, the subsequent record data is positioned where you want it.

For example, if you have defined a field size smaller than the actual field name, like STATE, which has a field size of 2 characters, the field name in brackets will be longer than the actual data display, but using a Tab after the STATE field positions the zip codes where you want them displayed.

For example, on the form your text looks like the following:

[CITY], [STATE]   [ZIP]

When the record information is displayed, the form is adjusted to display the information contained in the specified field names and the ZIP fields align.

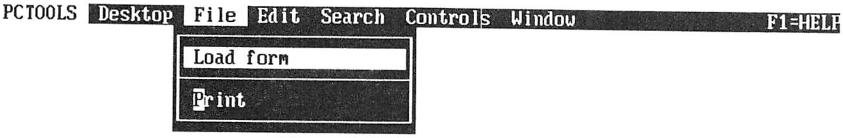
Beaverton, OR	97006
Evergreen Park, IL	60642
Austin, TX	78767

Or, if you have defined a field size larger than the actual field name, like a LAST_NAME field of 15 characters, the record information will take up as much room on the line as it needs to display the information even though the field name LAST_NAME only takes 9 characters.

[LAST_NAME],	[FIRST_NAME]
Arros,	Carolyn
Banks,	Don
Crowe,	Jack
Decker,	Paula
Eaverhouser,	Horatio
Frankensteiner,	Frances

Using Existing Database Files

If you already use dBase and have files you want to use in PC Tools Desktop, or you want to create records in PC Tools Desktop and copy them to dBase, you can. dBase allows you to copy records to and from PC Tools Desktop database files. You can also load an existing form and print records from your database file using commands from the File menu.



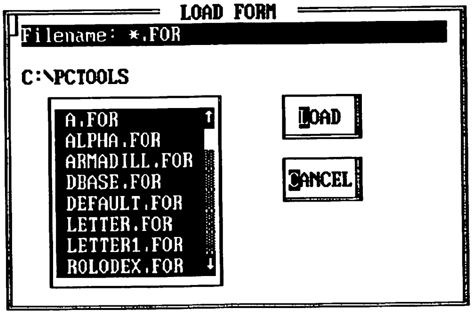
Load Form

One of the unique features of PC Tools Desktop Databases is that you have the option of designing and creating your own form file to display database records, or you can use the default form file that is automatically created when you create a new database file.

Form files must have the .FOR extension. When a database file is loaded, the database manager creates the default form file, giving it the same file name as the database file, but with the .FOR extension.

If you don't want to use the default form file, you can load any other forms you have created for the current database.

- Choose **Load form** from the File menu.
  The File Load dialog box appears for you to select a file from the list box.



Filename: *.FOR

C:\PCTOOLS

A.FOR
ALPHA.FOR
ARMADILL.FOR
DBASE.FOR
DEFAULT.FOR
LETTER.FOR
LETTER1.FOR
ROLODEX.FOR

Once the form file is loaded, the window display of the database is changed to reflect the new form file.

Print

The Print command enables you to print all or selected database records as they appear using the current form file. For example, you can write a form letter, then select the records from the database containing the names and addresses you want to send the letter to, then print the letter to send to the names on the selected records. The Print command also prints the field names associated with the database file.

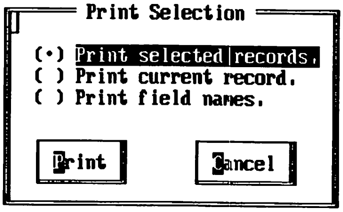
You can also make use of your printer's formatting capabilities such as boldface, italics, and underlining by inserting printer control macros into your form file. We have also included a simple way to send setup commands to your printer for your favorite font, type size, printing mode, etc. by using a macro called SETUP.

To make your printing task easier, PC Tools Desktop supplies you with macros for the Epson FX-80, the IBM Proprinter, Hewlett-Packard's Laserjet, and any Panasonic printer. See the "To build printer control macros" section in the Macro Editor chapter to learn how to add printing commands to your database and to learn how to use the SETUP macro.

To Print Records or Field Names:

Before you start printing, make sure your printer is connected and turned on and you have selected the margin settings you want using the **Page Layout** command from the Controls menu.

1. Choose **Print** from the File menu.
   The Database Print Selection dialog box appears.



(•) Print selected records.
( ) Print current record.
( ) Print field names.

2. Select any one of the following print options:

   Print selected records: prints only those records previously marked as selected as they appear in the current form file.

   Print current record: prints the currently displayed record as it appears in the current form file.

   Print field names: prints the list of field names used in the database. This option is useful when creating forms.

3. Select **Print** to start printing.
   The Print dialog box appears for you to select printing options. See "To print a file" in the Notepads chapter for an explanation of the options in the Print file dialog box.

Choosing **Cancel** closes the dialog box without saving any of the options.

Editing Records and Fields

Like an address book, a database file keeps a collection of related records that needs updating and changing from time to time. Editing records and fields in the database allows you to add or change any of the information in your database and always keep your records up to date. When you want to add records to a new database or make changes to the records in an existing database, you need to perform basic editing tasks.

To Edit Text Using the Keyboard:

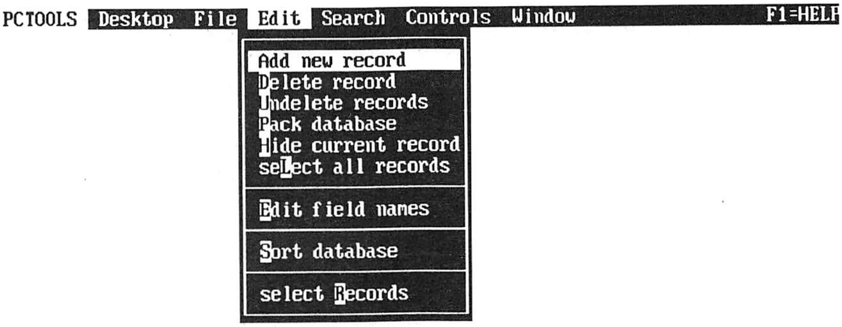
The keystrokes you need to know to move around in a record are displayed in the table below:

To	Press
Move to the next field	Tab key
Move to the previous field	Shift - Tab key
Move cursor up one line	Up arrow key
Move cursor down one line	Down arrow key
Move cursor left one character	Left arrow key
Move cursor right one character	Right arrow key
Move left one word	Ctrl - right arrow
Move right one word	Ctrl - left arrow
Move to the beginning of the line	Home
Move to the end of the line	End
Move to the beginning of the form	Ctrl - home
Move to the end of the form	Ctrl - end
Move to the beginning of a window	Home twice
Move to the end of a window	End twice
Scroll text up one window	PgUp
Scroll text down one window	PgDn
Scroll up one line without moving cursor	Ctrl - PgUp
Scroll down one line without moving cursor	Ctrl - PgDn

To Edit Using the Mouse:

You can use the mouse to reposition the cursor by pointing and clicking.

The Edit pull-down menu provides commands for editing records and fields.

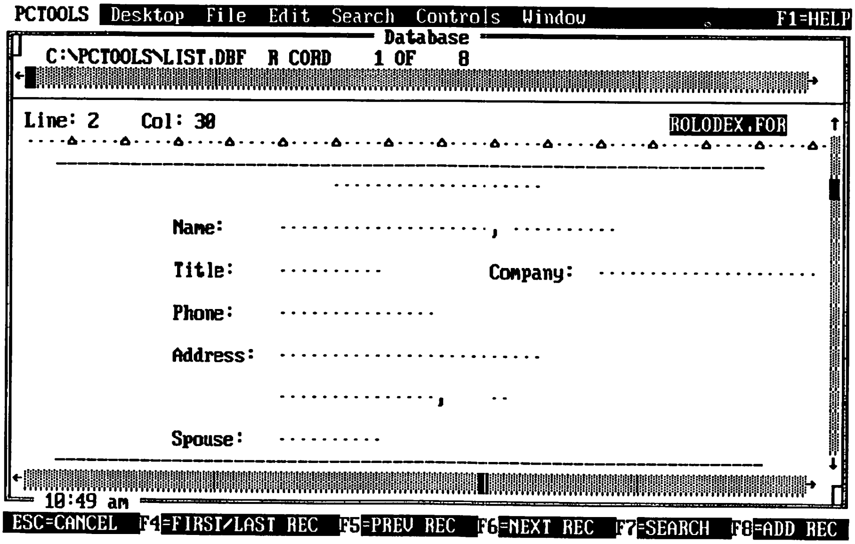


Add New Record

Once you have created the field definitions and selected or designed a form to display the data, you add new records by choosing the Add new record command and then entering the actual information contained within each record.

Records are added to the end of a database file and given a new record number one greater than the last record number.

1. Choose **Add new record** from the Edit menu or press F8.
   An empty record is added to the end of the database and is displayed in the form you selected or created.



C:\PCTOOLS\LIST.DBF R CORD 1 OF 8

Line: 2 Col: 30 ROLODEX.FOR

Name: ...., ...

Title: .... Company: ....

Phone: ....

Address: ....

..............., ..

Spouse: ....

10:49 am

2. Position the cursor anywhere on the field you want to edit using the keyboard or the mouse.
3. Type the information you want into the field. The database is in overtype mode by default, which means text is overwritten as you type. To change to insert mode, press the Ins key.
4. Press Enter to add the data in the field.
   The data is automatically saved and updated on the screen, and the cursor is positioned at the beginning of the next field. Pressing Esc or F3 cancels the edit.

Note: Type your record information the way you want it to appear and be printed. For example, capitalize people's names, put periods after abbreviations, and so on.

Editing Existing Records

If you are using an existing database file and want to change some of the information in the records, you need to edit the records.

1. Position the cursor anywhere in the field you want to edit, but not on the actual field name.
2. Change the field by typing the information you want in the field. Editing is in overtype mode by default; to change to insert mode, press the Insert key.
3. Press Enter to add the data to the field.
   The data is automatically saved and updated on the screen, and the cursor is positioned at the beginning of the next field.

Continue editing at the next field. When you are finished editing a record, select another record by using the scroll bar and the mouse, choosing the Goto record command from the Search menu, or pressing the short cut keys shown on the bottom of your screen.

Note: When you edit the sort field, the edited record will be placed in sorted order when the data is entered.

Delete Record

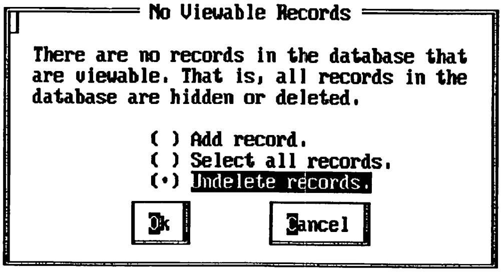
The Delete command does not permanently delete a record. Instead, the record is marked for deletion and can no longer be displayed until you undelete it. Since the record is still physically in the database, you can easily view it again by using the undelete command. Packing the database permanently removes previously deleted records. This function should be used only when you want to permanently erase records from your database.

Note: The database is designed to have at least one viewable record. If you delete the last record in the database, a message appears warning you that you are about to delete the last record and asking you to confirm your deletion.

1. Display the record you want to mark for deletion.
2. Choose **Delete record** from the Edit menu.
   The record disappears from the screen and can no longer be displayed. The next record in the database appears on the screen.

Deleting or Hiding the Last Record in the Database

Usually, any time you hide or delete records in the database, you will have at least one viewable record remaining in the database. However, if you choose to delete or hide all records in the database, a message appears asking you to confirm your decision before carrying out the action. If you choose to delete the last viewable record in the database, the following dialog box will appear:



No Vieuable Records

There are no records in the database that are vieuable. That is, all records in the database are hidden or deleted.

( ) Add record.
( ) Select all records.
(•) Undelete records.

- Select one of the following options:

  Add record: adds a new record to the database. The hidden or deleted records remain unchanged.

  Select all records: all the previously hidden records are made viewable in the database in the order you last sorted them. If you hid the last record in the database, the dialog box appears with this option selected.

  Undelete records: all the previously deleted records are made viewable in the database in the order you last sorted them. If you deleted the last record in the database, the dialog box appears with this option selected.

Note: Selecting the Cancel button closes the dialog box and returns you to the Desktop application you were using before you hid or deleted the last record.

Undelete Records

If you decide you want to see the records you marked for deletion, or if you make a mistake and mark the wrong record, you need to undelete the records. You cannot bring back just one record; choosing Undelete brings back all the records marked for deletion.

- Choose **Undelete records** from the Edit menu.
  All the deleted records are added to the database in their previously sorted order.

Pack Database

Packing a database removes the deleted records permanently from the database. Since there is currently a 3500 record limit in a database, keeping records in the database you no longer use may prevent you from having the needed storage space.

1. Delete the records you want to remove from the database.
2. Choose **Pack database** from the Edit menu.
   A message appears asking you to confirm the command.

All the records you marked for deletion are permanently erased.

Hiding Records and Selecting Hidden Records

There may be some situations when you do not want all the records in the database displayed. For example, you might want to eliminate some records when printing mailing labels. In this kind of situation, you can hide records. Hiding records is another way of marking the record so it will not be displayed.

Hide Current Record

Although the record remains a part of the database, hiding a record prevents the record from being displayed or printed. Hiding a record also prevents it from being deleted.

Note: The database is designed to have at least one viewable record. If you hide the last record in the database, a message appears warning you that you are about to hide the last record and asking you to confirm your decision.

1. Display the record you want to hide.
2. Choose **Hide current record** from the Edit menu.
   The current record disappears from the screen, and the next record in the database is displayed.

Select All Records

Selecting the hidden records enables you to display or view previously hidden records.

- Choose **Select All records** from the Edit menu.
  All previously hidden records are displayed in the current database, although the currently displayed record does not change.

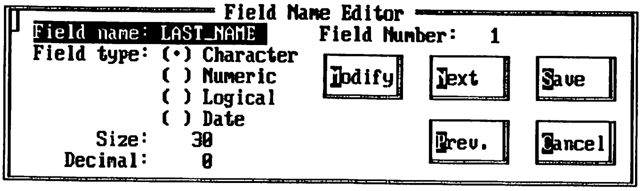
Edit Field Names

If you decide you want to change the field name ZIP to ZIP_CODE, for example, you need to use the Edit field names command.

Editing the field names changes the field name in the database file (.DBF), but it does not change the field names in brackets in the form file (.FOR). Since field names must match in .DBF and .FOR files in order for the record data to be retrieved and displayed correctly in the form file, you also have to change the field names in brackets in the form file to reflect any changes made to the field names in the database file.

For example, changing ZIP to ZIP_CODE will not retrieve and display Zip Code information unless you also change the name [ZIP] to [ZIP_CODE] in the form file. You can edit your form file using Notepads.

1. Choose **Edit field names** from the Edit menu.
   The Field Name Editor dialog box is displayed showing you the field names, their sizes and types. You can change the names of any of your fields, but you cannot change the size, type, or number of fields.



Field Name Editor

Field name: LAST_NAME   Field Number: 1

Field type: (•) Character
( ) Numeric
( ) Logical
( ) Date

Size: 30

Decimal: 0

2. Select any of the Field Name edit options:

   Field Name text box: where you enter the changes to the field name.

   Field Number: indicates the current field.

   Field Type: shows the current field type.

   Size: shows the size of the current field.

   Decimal: shows the decimal point position for the current field.

   Modify: saves the changes made to the current field name. If you do not select the Modify command button for each field name, then moving through the field names loses the change.

   Next: selects the next field. This options enables you to move forward through the fields.

   Previous: selects the previous field. This options enables you to move backward through the fields.

Save: saves all the changes and closes the dialog box. You return to the current record.

3. Select the **Save** command to save all the changes.

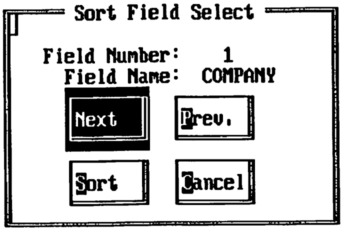
The **Cancel** command closes the dialog box, and returns to the current record. Any changes not saved with the Save command are lost.

Sort Database

One of the most powerful and useful features of a database is its ability to sort through records and re-organize records according to specified fields. For example, if you want to print a mailing list for bulk mailing, you need to organize your list according to zip codes. Sorting determines the order in which the records are displayed and printed, but the physical order of the records remains unchanged.

You can only sort on one field at a time, and the database uses the first 12 characters for sorting.

1. Choose **Sort database** from the Edit menu.
   The Sort Field Select dialog box appears, containing the name of the current sort field.



Field Number: 1
Field Name: COMPANY

2. Select one of the following sort command buttons:

   Next: selects the next field name to perform the sort. The field numbers and field names change as you select this button.

   Prev: selects the previous field name to perform the sort. The field numbers and field names change as you select this button.

   Sort: sorts the database using the selected field.

   Cancel: cancels the sort and closes the dialog box.

3. Select **Sort** to sort the database.
   A message box appears telling you to wait while the database is sorted.

Once the database is sorted, the current record is displayed but in the newly sorted order.

Selecting Records

PC Tools Desktop enables you to select which records you want to display and print based upon specified criteria. This can be very useful if you only want to work with some of the records in your database, for example, if you want to send letters to your New York customers only. Selecting records is different from searching the database. The Select command starts the comparison at the beginning of a field, and if a match isn't found, goes on to the next field. The Search command, on the other hand, searches the entire field for a match.

You may specify up to eight fields and selection criteria for each field in a record. When all fields match the criteria in a record, that record is selected and all other records are hidden. For example, in addition to entering NY as the criteria for the state field, you can enter New York as the criteria for the city field, and only records from New York City will be displayed or printed. Entering one Zip Code as a criteria for ZIP_CODE fields will select those records with the common Zip Code, which is useful for bulk mailings.

PC Tools Desktop accepts a wildcard character as a selection criteria which will match any character that appears in the specified field. For example, the Zip Code 97?06 would display 97006, 97106, 97206, and so on.

You can also specify ranges. For example, below are examples of ranges for zip codes:

70000. .77777	matches zip codes from 70000 through 77777.
70 . .	matches any zip code whose first two digits are greater than or equal to 70.
. .37	matches zip codes whose first two digits are less than or equal to 37.

You can also specify ranges for fields using letters, like names or cities.

A . . F	matches fields starting with A and going through F.

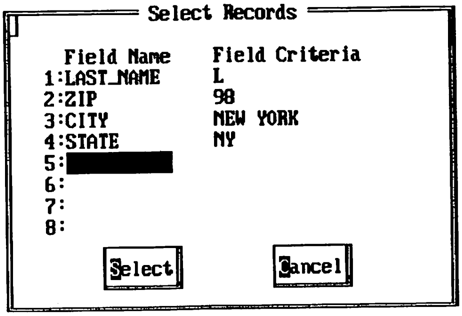
AA. . ASH matches fields starting from AA and going through ASH.

When specifying ranges, the case (upper or lower) of letters doesn't matter.

Select Records

Note: The database is designed to have at least one viewable record. If your selection criteria is such that all the records in the database are either deleted or hidden, a message will appear warning you that the last record in the database is about to be hidden and asking you to confirm your decision.

1. Choose **Select records** from the Edit menu.
   The Select Records dialog box appears.



Select Records

Field Name	Field Criteria
1:LAST_NAME	L
2:ZIP	98
3:CITY	NEW YORK
4:STATE	NY
5:	
6:	
7:	
8:	

2. Select the following selection criteria options in the following order:

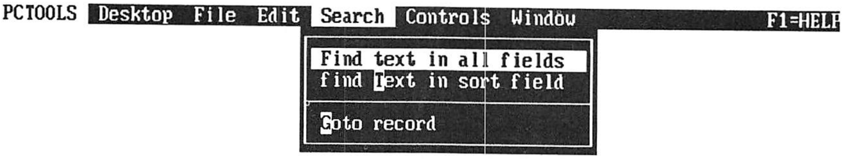
   Field Name text box: where you type up to 8 field name(s) for the database to search. For example, you can type STATE if you want to work with records based on criteria in state fields.

   Field Criteria text box: where you type the criteria to be used to match the specified field. For example, you can type "New" for the criteria to be used to search STATE fields and the database will be searched for all states containing the character string New.

3. Select the **Select** command button to search the database for all fields that match the selection criteria. All records not matching the criteria are hidden.

Searching in the Database

The Search pull-down menu provides a list of commands for searching for specified text or records in the database. You can search through your database for a particular string of characters. For example, you might remember a street name but not the person. Finding the record is easy using search functions.



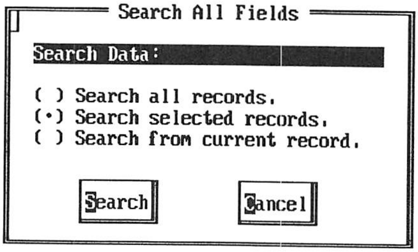
Finding Specified Text

Both Find commands search through your database records to find specified text. Beginning at the start of the database, the database is searched, and when the search is completed, the record containing the search character string is displayed with the cursor positioned at the beginning of its field. The search is case insensitive.

Find Text in All Fields

The **Find text in all fields** command searches all fields for specified text in any position of a field. For example, with the Find text in all fields command, you can find any record that contains a 4 in any position in any of its fields. The database searches the file for the the specified text and stops, with the cursor positioned at the beginning of the field in which the character string is located.

1. Choose **Find text in all fields** from the Search menu.
   The Search all fields dialog box appears.



○ Search all records.
● Search selected records.
○ Search from current record.

2. Type the character string you want to find in the Search Data text box.
3. Select any one of the following Search data commands:

   Search All Records: searches for the specified character string in all records, displayed, hidden, and deleted.

   Search Selected Records: searches for the specified character string in previously selected records.

   Search from current Record: searches for the specified character string, starting at and including the current record and searches to the end of the database.

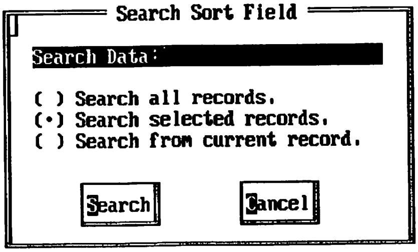
4. Select **Search** to begin the database search.
   The file is searched for the specified text and stops, with the cursor positioned at the beginning of the field in which the character string is located.

The dialog box is displayed until you close it or until the last occurrence of the search text is found or until you choose **Cancel.**

Find Text in the Sort Field

The **Find text in sort field** command allows you a fast way to find a record. For example, finding anyone's phone number is easy using the Find text in sort field when the database is sorted by last name. The Find text in sort field command sorts using the last sort field you used. To change the sort field, use the Sort database command.

1. Choose **Find text in sort field** from the Search menu.
   The Search sort field dialog box appears.



Search Sort Field

Search Data:

○ Search all records.
● Search selected records.
○ Search from current record.

2. Type the character string you want to find in the Search Data text box.
3. Select any one of the following Search data commands:

Search All Records: searches for the specified character string in the sort field of all records, displayed, hidden, and deleted.

Search Selected Records: searches for the specified character string in the sort field of previously selected records.

Search from current Record: searches for the specified character string in the sort field, starting at and including the current record and searches to the end of the database.

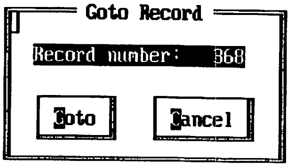
4. Select **Search** to begin the database search.
   The file is searched for the specified text and stops, with the cursor positioned at the beginning of the field in which the character string is located.

The dialog box is displayed until you close it or until the last occurrence of the search text is found or until you choose **Cancel.**

Go to Record

The record display in the top of the database window allows you to see which record you are currently displaying. To move quickly through the database or to move to a specified record, use the Goto record command.

1. Choose **Goto record** from the Search menu.
   The Goto record dialog box appears.



Record number: 368

2. Type the number of the record you want to go to in the Record number text box.
   The text box shows the number of the current record when the dialog box appears.
3. Select **Goto** to go to the specified record.

Selecting **Cancel** cancels the Goto Record command and returns you to the currently displayed record. Pressing the Esc key or clicking on the close box performs the same function as Cancel.

labelsmrequire the following setting: left margin 8 space; right margin 73 spaces; top margin 6 lines; and bottom margin 6 line.

Many printers have left margin settings, so you may need to print a sample document and make any necessary margin adjustments.

Paper size: allows you to specify the paper size you are using to print your file. The default setting is 66 lines, which corresponds to an 8.5" x 11" sheet of paper. If you are using legal size paper (8.5" x 14"), you need to change the Paper size setting to 84 lines. One inch mailing labels require a paper size setting of 6. These values assume your printer is set for 6 lines per inch. If your printer is set for another value, you need to change the settings.

Line spacing: specifies whether you want to single space or double space your text.

Starting page #: specifies the first page of your document. Subsequent pages will be numbered from this starting point.

Note: When printing mailing labels, calculate the paper size value like this: add the number of lines in the address (3), the top margin value (1), the bottom margin value (1) and the space between each label on the page (1). This calculation assumes you are using one-inch high labels on a continuous feed sheet.

3. Select **OK** to set the Page Layout controls.

Using the Autodialer

You can automatically dial a phone number found in any of your records if you have a Hayes compatible modem attached. Also the Appointment Scheduler chapter shows you how you can set an alarm to run a macro that will automatically bring up a record and dial a number.

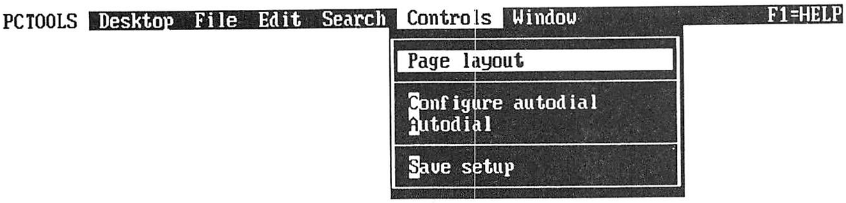
Note: If you use the autodialer feature to phone numbers from the database, make sure you structure the database with the phone number field as your first field containing numbers so that the autodialer can match the dialing criteria. If, for example, you were to place a Zip Code field before the phone number field in the database, the Autodialer would find and try to dial the Zip Code number.

When dialing a number in a record, the Autodialer scans all fields in the database (not just the viewable fields) and recognizes 3 or more consecutive numbers as a valid telephone number. The Autodialer accepts spaces, dashes, parenthesis,

Setting Document Controls

When you create a new form file in Notepads, you can set such document controls as automatic indenting, wordwrap, and tab stops. Once these settings are made in Notepads, the Database application displays the settings the way you selected them.

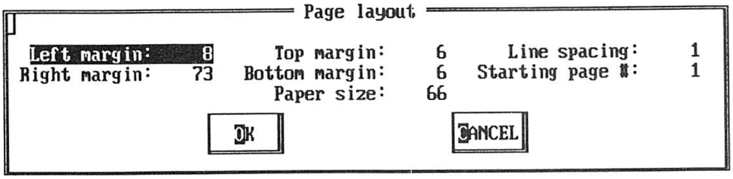
You can, however, set phone settings for automatic dialing and set up margins for printing from the Controls menu.



Page Layout

Before you print all or selected records in your database file, you can change the margins for printing letters or mailing labels. Even though you make these additions to your file, you won't be able to see them until you print the file.

1. Choose **Page layout** from the Controls menu.
   The Page layout dialog box appears.



Left margin: 8
Right margin: 73
Top margin: 6
Bottom margin: 6
Paper size: 66
Line spacing: 1
Starting page #: 1

2. Select any of the following Page layout options:

   Margins: sets the amount of blank space between the edges of the paper and your text. The current default settings are the following: left margin 8 spaces; right margin 73 spaces (from left edge of page); top margin 6 lines; and bottom margin 6 lines. These settings produce a one inch margin on all sides. If you want to change the margins, type a new number in the appropriate text box. Mailing hyphens, and "x" (for extensions) and will recognize the following characters when placed in a phone number:

P: used if you are have a rotary dial phone.

T: used if you have a Touch-Tone® phone.

, (comma): pauses two seconds before continuing to dial. If you want a longer pause, you can use more commas. This is useful if you have to dial 9, for example, to get a line outside a main switchboard.

*** or #:** accepted characters for phone numbers.

W: waits for a dial tone before proceeding. This is useful for dialing long distance access services that require you to wait for a tone before continuing to dial.

K: delays dialing until you press another key. Some on-line services answer the phone and return a tape-recorded request for more information before processing your transactions (such as automatic banking transactions). In such instances, you can use the K in your phone number.

@: waits for dial tone (no answer).

When you select a phone number with a K in it, the Autodial Pause dialog box appears with the following options:

Resume dialing: dials the remaining numbers in the phone string.

Cancel: cancels the dialing procedure and returns you to the current record.

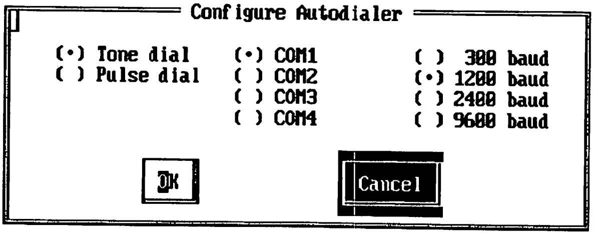
Configure Autodial

Before you can use the automatic dialing feature, you need to set transmission parameters to connect your computer system and modem. Once these parameters have been set, you don't need to change them unless you change modems. You also need to be aware of what kind of phone system you are using, for example, whether you are using a pulse or tone dialing procedure and what kinds of delays and pauses you are likely to see.

Your modem should be configured so that Data Carrier Detect (DCD or CD) and Data Set Ready (DSR) reflect the actual state of the carrier detect and DSR signals. Some modem manufacturers refer to this state as "True carrier detect" and "True DSR."

Note: Do *not* use the setting "Carrier detect always on" or "DSR always on." Consult your modem owner's manual for information on configuring your modem.

1. Choose **Configure autodial** from the Controls menu.
   The Configure Autodialer dialog box appears for you to set or verify transmission settings.



```
Configure Autodialer
(•) Tone dial     (•) COM1     ( )  300 baud
( ) Pulse dial    ( ) COM2     (•) 1200 baud
                  ( ) COM3     ( ) 2400 baud
                  ( ) COM4     ( ) 9600 baud
```

2. To change the settings, select any of the following configuration options:

   Tone dial: sets the dialing procedure for touch-tone phones. Using the T character in a phone number over rides this option.

   Pulse dial: sets the dialing procedure for rotary dial phones. Using the P character in a phone number over rides this option.

   COM 1, 2, 3, 4: shows which serial port your modem is connected to. Since COM 3 and COM4 are not standard, they must be defined on the command line with a parameter: /C3 or /C4 = IRQ,Base port address (for example, /C3=4,3E8). Refer to your modem manual for the IRQ and Base port address. This parameter is not necessary on PS/2's.

   300 to 9600 baud: shows the speed at which the computer transmission takes place. Set the baud speed according to your modem's specifications.

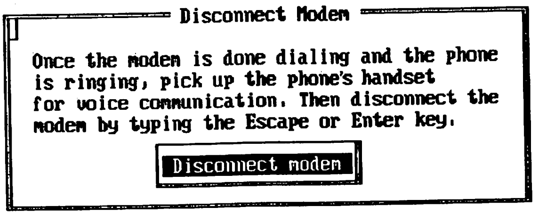
3. Select **OK** to set the new transmission settings.
   The dialog box closes and the current record appears for you to dial the phone number.

Selecting **Cancel** closes the dialog box without changing any settings and returns you to the current record. The dialog box opens with this option selected, allowing you to verify the transmission parameters.

Autodial

After you have selected all the appropriate settings for your Hayes compatible modem and have displayed the record containing the phone number you want to call, make sure the modem is connected and turned on.

1. Choose **Autodial** from the Controls menu.
   The database scans the current record's fields to find a phone number. When the number is found, the modem dials the number, and a message is displayed telling you how to proceed.



Disconnect Modem

Once the modem is done dialing and the phone is ringing, pick up the phone's handset for voice communication. Then disconnect the modem by typing the Escape or Enter key.

2. Pick up the telephone, and press the Esc or Enter key to disconnect the modem so you can talk to your party.
   or
   Click the disconnect command button.

Important: You must wait until the phone is ringing to disconnect the modem. You cannot cancel the autodial command before the modem has dialed the phone.

Save Setup

With Save Setup you can save all the selections you've made in the Controls and Windows menus. For example, if you usually use the same settings for margins, headers/footers, wordwrap, overtype, windows colors, etc., you can choose the Save Setup command so that every time you open a new Database, you don't need to make any changes.

Save Setup enables you to save window settings for the current Database, while the options for printing and formatting on the Controls menu are globally saved for *all* four Desktop applications that use printing (Notepads, Outlines, the Macro Editor and Databases). Unless you choose Save Setup, other commands you choose from the Controls and Windows menu affect only the current file.

Appointment Scheduler

The Appointment Scheduler contains a calendar, scheduler, and a to-do list which allows you to create, edit, view, and print your day or month's appointments and projects.

Since the Appointment Scheduler stays in memory once you have loaded PC Tools Desktop as a memory-resident program, you can quickly add, delete, or change appointments while you are in the middle of any application. Let's say you are busy writing your monthly sales report when your regional manager calls to schedule a meeting next month. You can quickly display the Appointment Scheduler for the following month, check to see if you are free, and schedule the appointment without leaving your report application.

In addition, macros can be included when you set an alarm in the Appointment Scheduler. Attaching a macro to an alarm enables you to perform such tasks as pop up a notepad with meeting notes, pull up a database record and dial a phone number, or run a program at a set time when you aren't there. You can also attach a standard Notepad file to an appointment for longer notes. The Appointment Scheduler will also accept ASCII graphics characters.

Schedule (.TM) Files

The schedules created by the Appointment Scheduler are kept in files with a default extension of .TM. Any files in the current directory with the .TM extension are listed in the File Load dialog box when you start the Appointment Scheduler.

You can use the File Load dialog box to create a new schedule or load an existing schedule. If several people use the same PC, for example, each person could have his or her own schedule file. If the departmental secretary is responsible for keeping everyone's schedule, each person's schedule can be kept in individual files.

Viewing the Day's Schedule at System Start up

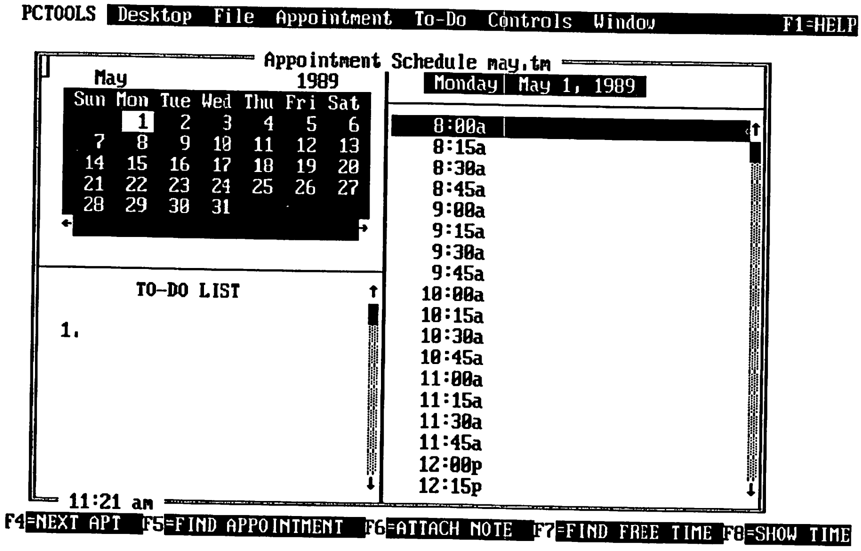
By installing Desktop with the /RA parameter instead of /R, Desktop will come up as if you had hotkeyed into it, and the Appointment Scheduler will display today's schedule and To-Do list. At this point Desktop is fully functional. If you do not have an active Appointment Schedule file with appointments set, Desktop will come up as if you had installed it with /R.

If you have Desktop installed in your AUTOEXEC.BAT file using this parameter, it should be the last entry in the file because everything that follows it will not be executed until Desktop is exited.

Starting the Appointment Scheduler

This section is intended to get you acquainted with the Appointment Scheduler. It shows you the important features of the scheduler and how to start using it.

1. Choose **Appointment Scheduler** from the Desktop menu.
   The File Load dialog box appears.
2. Create a new file with a .TM extension. This starts the Appointment Scheduler on today's date with a blank schedule.



May 1989

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

1.

11:21 am

Monday | May 1, 1989

8:00a
8:15a
8:30a
8:45a
9:00a
9:15a
9:30a
9:45a
10:00a
10:15a
10:30a
10:45a
11:00a
11:15a
11:30a
11:45a
12:00p
12:15p

From top to bottom, the Appointment Scheduler screen contains the following parts:

- **Appointment Scheduler Horizontal Menu bar:** This contains the names of the pull-down menus and on-line Help for quick answers and guidelines.

- **Window Border:** This indicates the active window with a double border. The top border can be used by a mouse to move the window. The time is also displayed on the lower left corner of the active window's border.

- **Monthly Calendar:** This portion of the main window is a month-by-month calendar with the selected date highlighted. This date sets the day shown on the Daily Scheduler. The calendar is perpetual, so there is no end date.

  To select a date with the keyboard, use the Up, Down, Right, or Left arrow keys. If you move beyond the first or last day of the month, the calendar scrolls to the next month. Pressing the Home key changes the day to today's date.

  You can switch months by using the PageUp/PageDown keys or clicking on the arrows at the corners of the calendar box. If you want to return to the current date, press Home.

  You can also switch years by pressing Ctrl plus the PageUp/PageDown keys.

- **Daily Scheduler:** This portion of the main window is a daily time planner with the selected time highlighted.

  To select a time with the keyboard, use the Up/Down arrow keys. You can page the display by using the PageUp/PageDown keys or using the scroll bar. The Home key selects the earliest appointment time, and the End key selects the last appointment time. Pressing Enter enables you to make an appointment for the highlighted time. If you have existing appointments, pressing Enter enables you to edit or delete them. Also, if you have an attached note (a full Notepad file), pressing F6 on the existing appointment pops up the attached Notepad.

- **"Things To Do" list:** This portion of the main window is a reminder of important things to do, listed in order of priority. You can have up to 80 items on this list with attached notes, although only 8 can be displayed on the screen at once. The To-Do List is independent of the Monthly Calendar and the Daily Scheduler.

  To select an item with the keyboard, use the Up/Down arrow keys. Page through the list by using the PageUp/PageDown keys or using the scroll bar. The Home key selects the first item, and the End key selects the last item.

- **Scroll bars:** These are used with the mouse to move through the display.

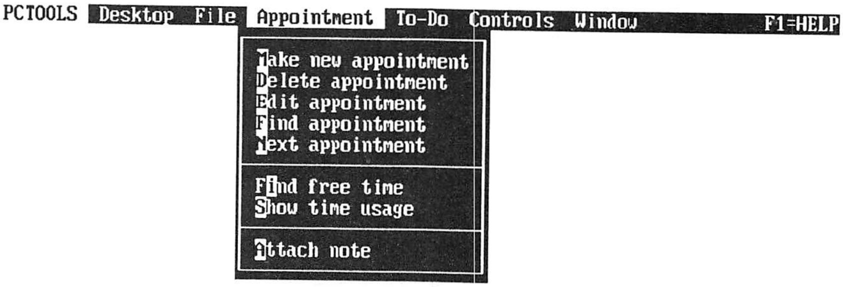
- **Message bar:** This contains messages to guide you through the Appointment Scheduler. When you open the Appointment Scheduler, short cut keys are displayed. You can select any of these commands by pressing the highlighted function key or positioning the mouse cursor on any portion of the command or highlighted key and clicking the mouse. For example, to attach a note to an appointment, just press F6 or click anyplace on "F6=ATTACH NOTE" with the mouse; this brings up a blank Notepad to write a note.

You can move between the Monthly Calendar, the Daily Schedule, and the To-Do regions by pressing the Tab key or clicking the mouse in the subwindow. The active region shows a highlighted name at the top.

The Appointment Scheduler short cut keys are displayed on the message bar at the bottom of your screen.

Making Appointments

The Appointment menu controls the way that Appointment Scheduler makes and deletes appointments.



Make New Appointment

The **Make new appointment** command creates a new appointment. This command also enables you to set an alarm to run a program or a macro, or display an attached Notepad, when Desktop is running resident. (See the examples in the sections entitled "Running a program at an alarm," "Loading a Notepad at an alarm," and "Using macros with the Appointment Scheduler.") You can also specify whether to attach a note, which pops up a Notepad, to an appointment. There are two ways to set an appointment; here's the first way:

Short cut

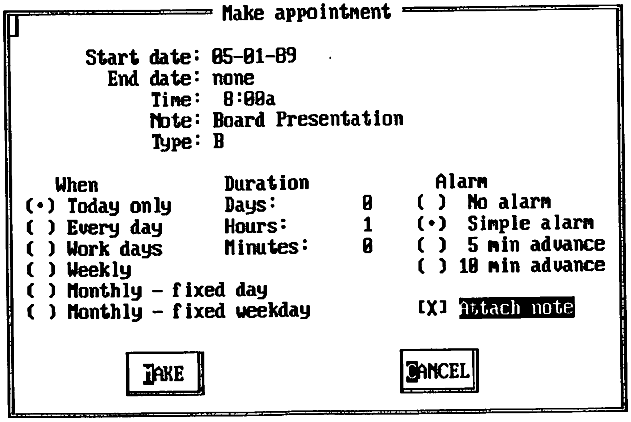
1. Select the Monthly Calendar, then select a date when you'd like to make an appointment.
2. Select the the Daily Scheduler, then move the cursor to the time you want to make the appointment. Remember, you can move between the regions of the Appointment Scheduler by pressing the Tab key.

3. Press Enter or click with the mouse button. This will bring up the Make Appointment dialog box (below) with the date and time filled in.

   You can type in a reminder note before pressing Enter. Type up to 24 characters to remind you what you've set an appointment for. When you do this, the note appears in the dialog box. The reminder note is then displayed in your daily schedule, next to the time of the appointment, until you change or delete it. (ASCII graphics characters are also allowed; just press the Alt key along with the decimal equivalent to get the ASCII character. For example, pressing Alt-7 inserts a bullet, •.)

   A warning message will be displayed if you try to make an appointment on a date prior to the current date or if you try to make a recurring appointment that has an end date prior to the current date. You will, however, be able to make the appointment.

   The other options found in the Make appointment box are explained on the next two pages.



```
                     Make appointment

        Start date: 05-01-89
          End date: none
              Time:  8:00a
              Note: Board Presentation
              Type: B

   When                 Duration              Alarm
(•) Today only          Days:        0    ( )  No alarm
( ) Every day           Hours:       1    (•)  Simple alarm
( ) Work days           Minutes:     0    ( )  5 min advance
( ) Weekly                                ( ) 10 min advance
( ) Monthly - fixed day
( ) Monthly - fixed weekday               [X] Attach note
```

or

1. Select the Monthly Calendar, then select a date when you'd like to make an appointment.
2. Select the the Daily Scheduler, then move the cursor to the time you want to make the appointment. Remember, you can move between the regions of the Appointment Scheduler by pressing the Tab key.

3. Choose **Make new appointment** from the Appointment menu. This will bring up the Make appointment dialog box for you to enter any notes (or macros).

   A warning message will be displayed if you try to make an appointment on a date prior to the current date or if you try to make a recurring appointment that has an end date prior to the current date. You will, however, be able to make the appointment.

   - Enter the starting and ending dates in the Date text boxes, the time in the Time text box, and a reminder of the appointment you want to make in the Note text box. This reminder appears in the Daily Scheduler, next to the time of the appointment. The end date is necessary only if you are setting a recurring appointment, for example, everyday, or on all weekdays. If you try to set an appointment during another scheduled appointment, a message box will appear informing you of the scheduling conflict.

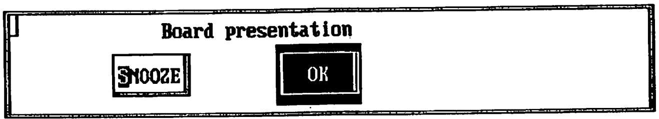
     You can also specify a one character field, "Type," to classify appointments. For example, you might want to classify all of your meetings with the production department with a "P" and all of your meetings with the accounting department with a "A", and so on.

4 The **When** column gives you the choice of setting up a one-time appointment (**Today only**) or appointments that repeat on a daily, weekly, or monthly basis. If you want an appointment to repeat at the same time every business day, such as lunch, select **Work days.** (See "Personalizing the Appointment Scheduler" for the procedure to define work days.) If you want an appointment to repeat at the same day every month, select **Monthly--fixed day** or the same day of the week every month, select **Monthly--fixed weekday**.

5. The **Duration** columns set up the length of the appointment. If the selected time overlaps with an existing appointment, you'll see a warning after you select **Make.** Type the number or days, hours or minutes you want. When the appointment appears on the screen, the duration is indicated by a vertical bar to the left of the appointment. Individual appointments can be made at any time and will be displayed at the time you enter, replacing the closest 15 or 30 minute time slot.

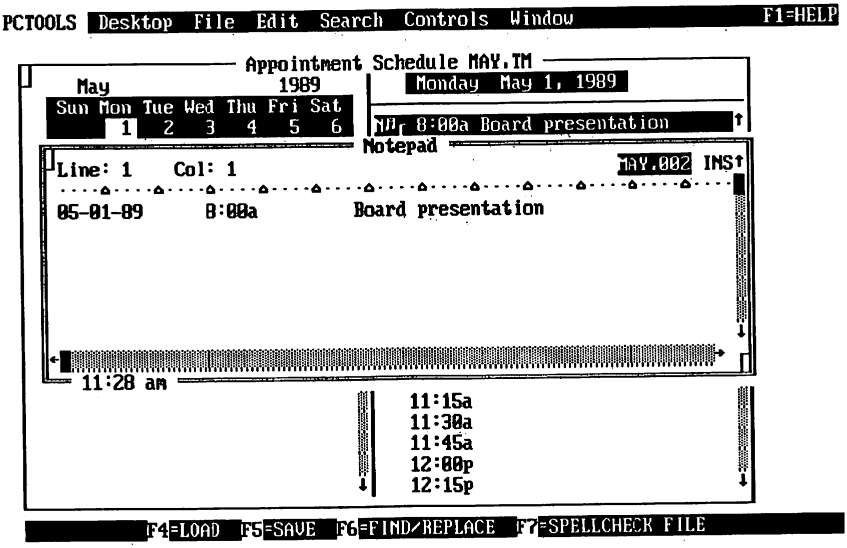
6. The **Alarm** column controls what PC Tools Desktop does when the appointment comes due. You can ask for an alarm to go off at the time of the appointment, five or ten minutes early, or choose no alarm at all.

- If you choose to set an alarm, PC Tools Desktop will interrupt whatever program is running, beep the speaker, and display a message box with the name of the appointment when the alarm goes off. The message box remains on the screen until you select OK. Selecting SNOOZE will clear the alarm message from the screen, and cause the alarm to sound and display the message box again in five minutes.



Board presentation

7. The **Attach note** option enables you to attach a standard Notepad file to any appointment.
8. When you're satisfied with your choices, select **Make.**
   If you had selected Attach note, the Notepad (below) is automatically displayed on top of the Appointment Scheduler.

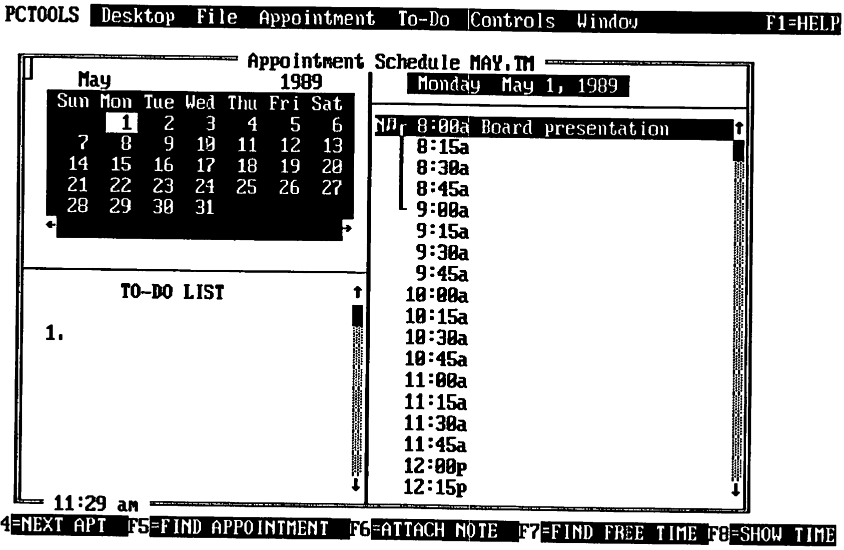


8:00a Board presentation

05-01-89 8:00a Board presentation

11:15a
11:30a
11:45a
12:00p
12:15p

The top line of the Notepad contains the appointment reminder note and the date and time; the rest of the file is blank for you to add whatever text you want. All Notepad editing functions are available. When you are done writing your note, press Esc or click on the close box to return to the Appointment Scheduler.



May 1989

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

1.

Monday May 1, 1989

```
N♫ 8:00a Board presentation
   8:15a
   8:30a
   8:45a
   9:00a
   9:15a
   9:30a
   9:45a
  10:00a
  10:15a
  10:30a
  10:45a
  11:00a
  11:15a
  11:30a
  11:45a
  12:00p
  12:15p
```

Your new appointment now appears in the Daily Scheduler. If you set an alarm, a small musical note symbol appears to the left of the duration bar for the appointment. A recurring appointment with an alarm is indicated by a double note. A non-recurring appointment with an alarm is indicated with a single note symbol. If you have an attached note, an "N" appears to the left of the musical note.

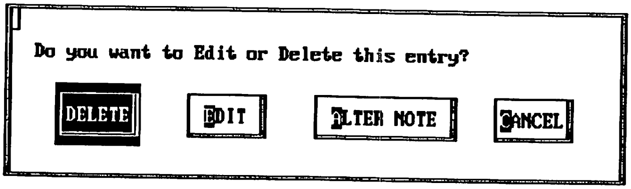
Note: If appointments overlap, the overlapping times are highlighted on the duration bar.

Delete Appointment

The **Delete Appointment** command removes the currently selected appointment. You can remove a one-time appointment or a recurring appointment.

Short cut

1. Select an appointment on the Daily Scheduler by clicking on the appointment or moving the highlight bar to the appointment and pressing Enter. A dialog box appears asking if you want to edit, delete, or alter the note attached to the appointment.

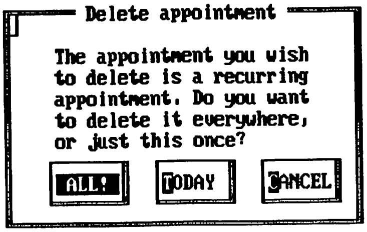

Do you want to Edit or Delete this entry?

2. Select **Delete.**

or

1. Highlight an appointment on the Daily Scheduler.
2. Choose **Delete Appointment** from the Appointment menu.
3. Select **OK** from the dialog box asking for confirmation.
   This removes the appointment.

- If you try to delete a recurring appointment, you'll see an additional dialog box asking if you want to delete all of the recurring appointments, just for today, or cancel the deletion.



Delete appointment

The appointment you wish to delete is a recurring appointment. Do you want to delete it everywhere, or just this once?

Edit Appointment

The **Edit Appointment** command enables you to change the currently selected appointment. You can edit a one-time appointment or a recurring appointment.

Short cut

1. Select an appointment on the Daily Scheduler by clicking on the appointment or moving the highlight bar to the appointment and pressing Enter.
   A dialog box appears asking if you want to edit, delete, or alter the note attached to the appointment.
2. Select **Edit.**
   This pops up the Make appointment dialog box with your currently selected appointment. You can now make any changes you want to the appointment setting.

   Note: If you select **Alter note** in the Edit/Delete appointment dialog box, the attached Notepad file pops up for you to edit.

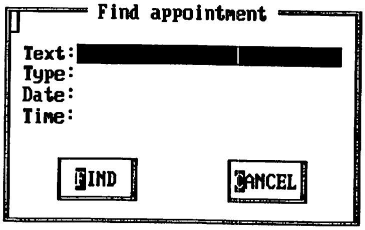
or

1. Highlight an appointment on the Daily Scheduler by scrolling with the arrow keys.
2. Choose **Edit Appointment** from the Appointment menu.
   This pops up the Make appointment dialog box with your currently selected appointment. You can now make any changes you want to the appointment setting.

Find Appointment

The **Find Appointment** command enables you to search the Appointment Scheduler by Text, Type, Date, and/or Time for a specified appointment. For example, if you are looking for a "project meeting" appointment with the production department, you would enter "project" in the text field and "P" in the Type field.

1. Choose **Find appointment** from the Appointment menu or press F5.
   The Find appointment dialog box appears asking you to enter the text, type, date, and/or time you want to search for. You can enter text in upper- or lower-case; for example, Project, PROJECT, and project are all recognized the same.



2. Select **Find** to start the search.
   Any appointments after the current date and time containing the word "project" in the note field and having the type of "P" will be found.

Pressing Enter (or selecting Find) without typing a character string to search for will find all appointments after the current date and time.

Next Appointment

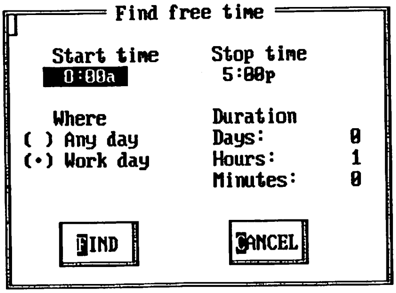
The **Next Appointment** command enables you to quickly display the next appointment you have scheduled for that day. No matter what you are currently doing in the Appointment Scheduler, you can immediately find out what your next appointment is. If you have no more appointments scheduled for the day, **Next appointment** positions the cursor on the current time. Pressing F4 also quickly displays the next appointment.

Find Free Time

The **Find Free Time** command moves the cursor in the Daily Scheduler to the first free block of time of the duration you request.

1. Choose **Find Free Time** from the Appointment menu or press F7. This pops up the Find Free Time dialog box.

- The **Start time** and **Stop time** text boxes allow you to enter the times Desktop is to start and stop looking for free time.
- The **Where** column lets you select whether the Appointment Scheduler should limit the search to days bounded by the Appointment Settings (Work Day) or any day. The search starts at the currently selected time.
- The **Duration** column lets you enter the length of time to find in days, hours or minutes.



Start time
0:00a

Stop time
5:00p

Where
( ) Any day
(•) Work day

Duration
Days: 0
Hours: 1
Minutes: 0

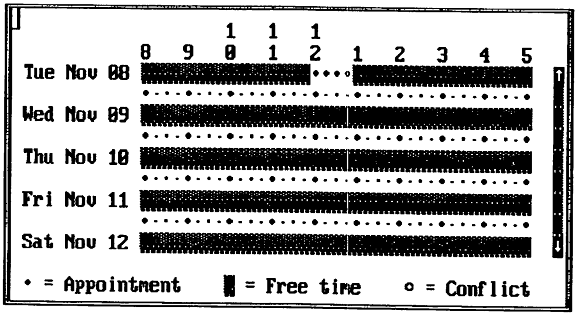
2. Select **Find**. The Appointment Scheduler moves the cursor in the Daily Schedule to the first free block of time long enough. It will look ahead, up to 365 days, to find the time slot you need.

Show Time Usage

The **Show Time Usage** command graphically shows you 5 days at a glance.

1. Choose **Show Time Usage** from the Appointment menu or press F8.

   This pops up a dialog box that shows you 5 day's schedule at a glance. The first day is the selected day on the Monthly Calendar. When you scroll the Time Usage box with the arrow keys or the mouse, it also changes the selected date on the calendar. Pressing the Home key returns you to today's date, while the Page/Up and Page/Down keys move you 5 days ahead or back at a time.



The solid dots represent appointments; shaded areas are free times; and transparent dots are conflicts.

Press Esc or click on the close box. This returns you to the main window of the Appointment Scheduler.

Attach Note

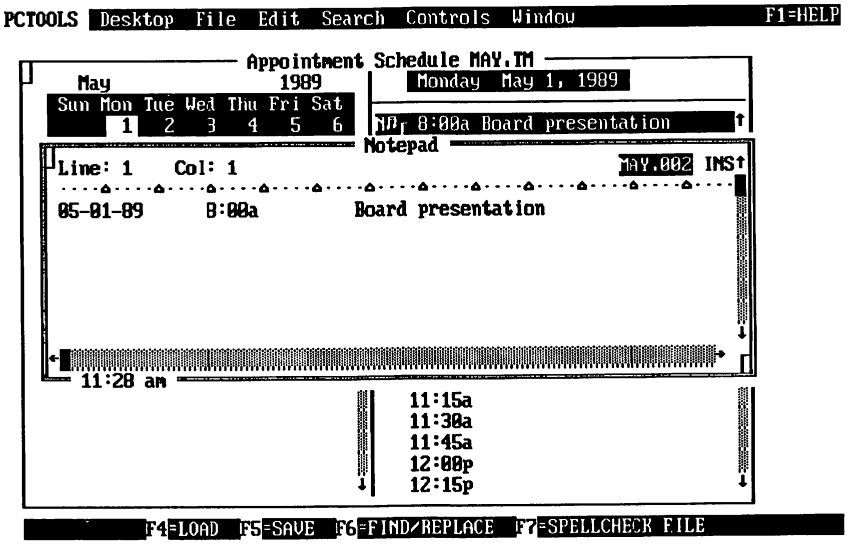
You can attach a note to any appointment. Attached notes are standard Notepad files which give you more room to enter text that you would like to keep associated with any appointment. After an attached note is created, you can view or edit it any time from the Appointment Schedule.

To Attach a Note when Creating an Appointment:

1. Select the Attach note option in the Make/Edit appointment dialog box.
2. Select Make to make the appointment.
   The dialog box goes away.

To Attach a Note to an Existing Appointment:

1. Select the Appointment you want to attach a note to by moving the highlight bar over it.
2. Choose Attach Note from the Appointment menu.
   or
   Press the F6 key.


PCTOOLS
Desktop File Edit Search Controls Window
F1=HELP
Notepad
F4=LOAD F5=SAVE F6=FIND/REPLACE F7=SPELLCHECK FILE

```
Appointment Schedule MAY.TM
May            1989        Monday  May 1, 1989
Sun Mon Tue Wed Thu Fri Sat
     1   2   3   4   5   6     N 8:00a Board presentation
Line: 1    Col: 1                              MAY.002 INS
05-01-89        8:00a          Board presentation
11:28 am
                       11:15a
                       11:30a
                       11:45a
                       12:00p
                       12:15p
```

A Notepad is displayed on top of the Appointment Scheduler. The top line of the Notepad will contain the appointment note, the date and time; the rest of the file will be blank for you to add whatever text you want. All Notepad editing functions are available. When you are done, press Esc or click on the close box to return to the Appointment Scheduler.

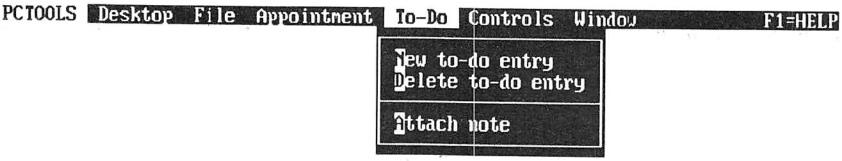
The note will have the same file name as the current appointment scheduler file with an extension that is the internal ID number of the selected appointment and will be created in the same directory as your Appointment Scheduler file. An "N" will appear to the left of the appointment on the scheduler to indicate a note is attached.

To Edit an Attached Note:

1. Select an appointment on the Daily Scheduler by clicking on the appointment or moving the highlight bar to the appointment and pressing Enter.
   or
   Press the F6 key.
   A dialog box appears asking if you want to edit, delete, or alter the note attached to the appointment.
2. Select **Alter note.**
   This pops up the attached notepad. You can now make any changes you want to the attached note.

Using the To-Do List

The To-Do menu controls the entries on the "Things to do" list. This is a list of up to 80 items that are displayed independently of the scheduler and the calendar. To-do entries are displayed only for a specified period of time, beginning on the date they are made and ending on the end date you enter. Also, each entry in the list can have a note attached to it and be assigned a priority. The list is displayed in priority order.



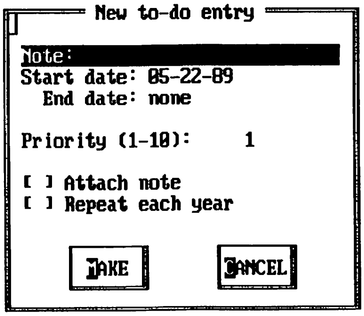
New To-Do Entry

Short cut

- Position the cursor on the blank To-do item and start typing. Press Enter when you are done . This pops up the New to-do entry dialog box with the note filled in. The other options in the New to-do entry dialog box are explained below.

  or

1. Position the cursor on the blank To-do entry and press Enter.
   or
   Click on the blank To-do entry.
   or
   Choose **New to-do entry** from the To-do menu.
   This pops up the New to-do entry dialog box.



Note:
Start date: 05-22-89
End date: none

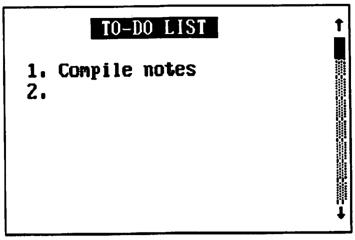
Priority (1-10): 1

☐ Attach note
☐ Repeat each year

2. Type a note in the Note text box.
3. Specify the end date. To-do entries are displayed only for a specified period of time, beginning on the date they are made and ending on the end date you enter. If no end date is specified, the entry will remain on the list until you delete it. Also specify the priority. All To-do entries are sorted and displayed by priority number.

   Check the **Attach note** check box if you want to attach a standard Notepad file for lengthy notes. The **Repeat each year** option displays the reminder note on the same day each year for the specified date range. This is useful for remembering birthdays, anniversaries, etc.

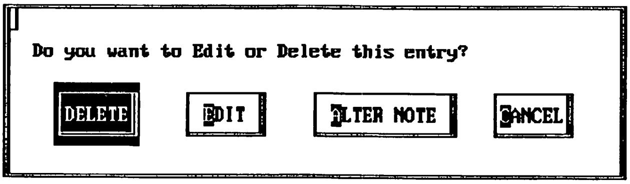
4. Select **Make**. The entry is added to the "Things to Do" list according to the priority you set.



1. Compile notes
2.

Delete To-Do Entry

- Select the note you want to delete in the Things to Do list. This pops up the Delete/Edit dialog box for you to delete, edit, or alter the note attached to the selected entry.



Do you want to Edit or Delete this entry?

or

1. Select the note you want to delete in the Things to Do list.
2. Choose **Delete to-do entry** from the To-Do menu.
   This deletes the selected entry from the "Thing to Do" list.

Attach Note

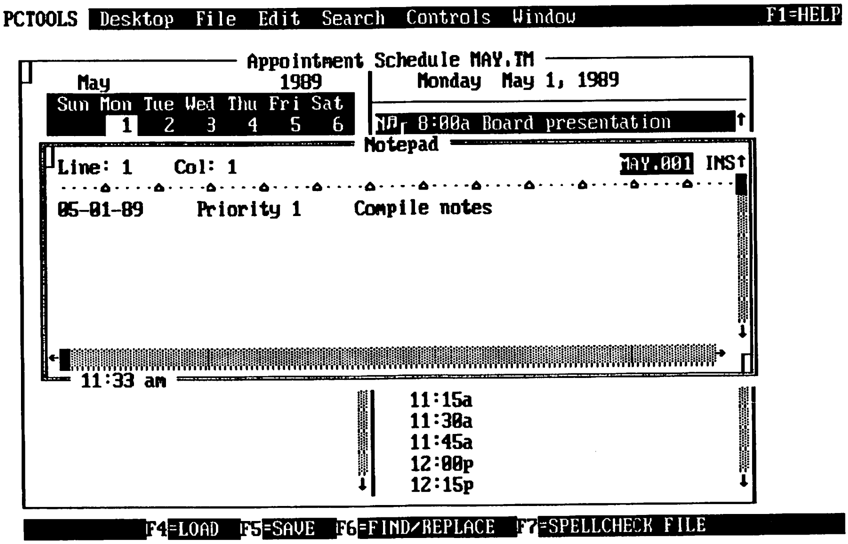
You can attach a note to any To-Do list entry. Attached notes are standard Notepad files. They give you more room to enter text that you would like to keep associated with any To-Do entry. After an attached note is created, you can view or edit it anytime from the Appointment Schedule. It works as follows:

To Attach a Note when Creating a To-Do Entry:

1. Select the Attach note option in the New to-do entry dialog box.
2. Select Make to add the entry to the list.
   The dialog box goes away and the attached note appears.

To Attach a Note to an Existing To-Do Entry:

1. Select the To-Do list entry you want to attach a note to by moving the highlight bar over it.
2. Choose **Attach Note** from To-Do menu.
   or
   Press the F6 key. A Notepad is displayed on top of the Appointment Scheduler.



```
Appointment Schedule MAY.TM
May                1989     Monday  May 1, 1989
Sun Mon Tue Wed Thu Fri Sat
     1   2   3   4   5   6  N 8:00a Board presentation
Notepad
Line: 1    Col: 1                          MAY.001  INS
05-01-89      Priority 1     Compile notes
11:33 am
                              11:15a
                              11:30a
                              11:45a
                              12:00p
                              12:15p
```

The top line of the Notepad contains the To-do note, the date and time, and the priority number; the rest of the file will be blank for you to add whatever text you want. All Notepad editing functions are available. When you are done, press Esc to return to the Appointment Scheduler.

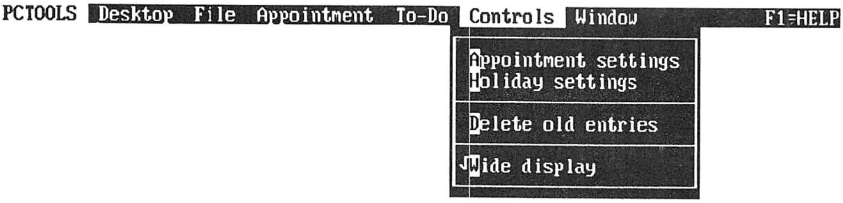
The note will have the same file name as the current appointment scheduler file with an extension that is the internal ID number of the selected To-Do entry and will be created in the same directory as your Appointment Scheduler file. An "N" will appear to the left of the entry on the To-do list to indicate a note is attached.

To Edit an Attached Note:

1. Select a To-do entry by clicking on the entry or moving the highlight bar to the entry and pressing Enter.
   or
   Press the F6 key.
   A dialog box appears asking if you want to edit, delete, or alter the note attached to the To-do entry.
2. Select **Alter note.**
   This pops up the attached notepad. You can now make any changes you want to the attached note.

Personalizing the Appointment Scheduler

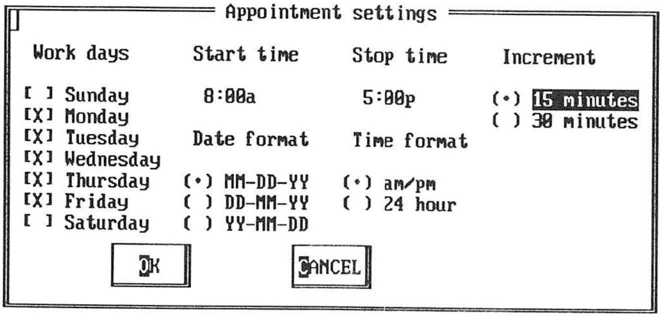
The Controls menu offers you commands for personalizing your appointment schedule. You can change appointment settings, designate the holidays you observe, delete old entries, or select to view all or part of the Appointment Scheduler screen.



Appointment Settings

You can set up the start and stop times for your work day. When you use the **Appointment Settings** command in the Appointment menu, it changes the range of hours shown on the Daily Scheduler, the **Show time usage** display, and changes the way that **Find Free Time** works.

1. Choose **Appointment Settings** from the Controls menu.
   The Appointment settings dialog box appears.



Appointment settings

Work days
☐ Sunday
☒ Monday
☒ Tuesday
☒ Wednesday
☒ Thursday
☒ Friday
☐ Saturday

Start time: 8:00a

Stop time: 5:00p

Increment
● 15 minutes
○ 30 minutes

Date format
● MM-DD-YY
○ DD-MM-YY
○ YY-MM-DD

Time format
● am/pm
○ 24 hour

2. The settings in this box control the allowable times and the time increments of appointments. You can select any combination of **Work days**, type in a number value for **Start time** and **Stop time**, and select either 15 or 30 minute appointment time increments. You can also select different formats for **Date** and **Time**.

Start time and Stop time can be entered in several different formats:

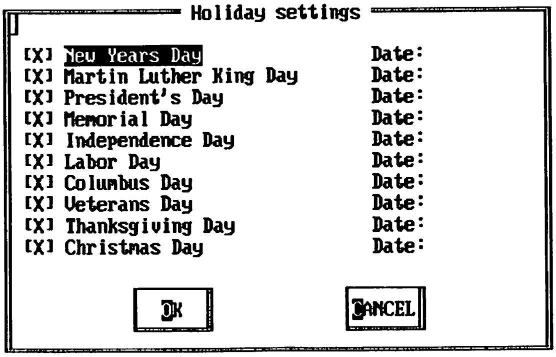
• 9:00a	or	• 11:30p
• 9:00		• 23:30
• 0900		• 2330
• 9		

3. When you're satisfied with your selections, select **OK**. The Appointment Scheduler is now set.

Holiday Settings

The **Holiday settings** command allows you to designate which holidays you will observe. This is useful to avoid scheduling any appointments on holidays. Holidays appear with an asterisk (*) to the left of the date on the Daily Scheduler. (The Appointment Scheduler is intelligent enough to know what dates specified holidays fall on.) Recurring appointments will not be made on holidays. For example, if you make a recurring appointment on Mondays, the Monday holidays will not contain the appointment.

1. Choose **Holiday settings** from the Controls menu.
   The Holiday settings dialog box appears. If you want to turn on or off any of the listed holidays, select that holiday. A checkmark appears in the box to the left of the holiday when it is "turned on." You can also add any additional holidays that you observe by entering the dates in the Date column. Tab to the Date fields and enter the holidays you want using the same date format you selected in the Appointment settings dialog box.



Holiday settings

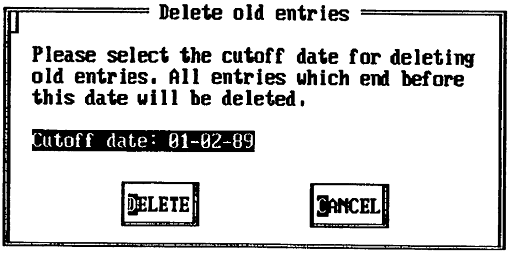
[X] New Years Day Date:
[X] Martin Luther King Day Date:
[X] President's Day Date:
[X] Memorial Day Date:
[X] Independence Day Date:
[X] Labor Day Date:
[X] Columbus Day Date:
[X] Veterans Day Date:
[X] Thanksgiving Day Date:
[X] Christmas Day Date:

2. When you have set your holidays, select OK.

Delete Old Entries

The Delete old entries command enables you to keep your Appointment Scheduler up to date by clearing out old appointments. In addition, deleting old entries prevents the Appointment Scheduler file from becoming too large. If the file becomes too large, you may begin to notice the Appointment Scheduler respond more slowly to commands on slower (4.77MHz) machines.

- Choose **Delete old entries** from the Controls menu. This pops up the following dialog box so you can specify the cutoff date for erasing old entries. All scheduled appointments ending before the specified date will be erased.



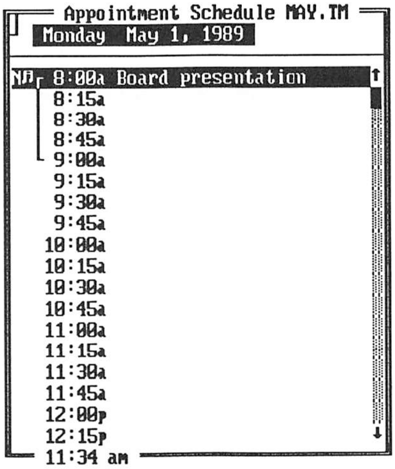
Please select the cutoff date for deleting old entries. All entries which end before this date will be deleted.

Cutoff date: 01-02-89

Wide Display

You have the option of reducing the size of the scheduler window by removing the To-Do list and calendar display. If you would prefer to have a smaller window for your scheduler, use the wide display command.

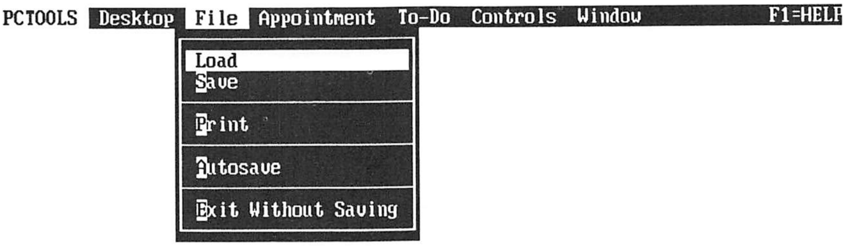
- Choose **Wide display** from the Controls menu to toggle this setting on or off. When the setting is turned off, the Calendar and To-Do list are not displayed. When the setting is turned on, a checkmark appears to the left of the command name on the menu.



```
Appointment Schedule MAY.TM
Monday  May 1, 1989

 8:00a Board presentation
 8:15a
 8:30a
 8:45a
 9:00a
 9:15a
 9:30a
 9:45a
10:00a
10:15a
10:30a
10:45a
11:00a
11:15a
11:30a
11:45a
12:00p
12:15p
11:34 am
```

Working with Schedule Files

The File menu lets you print and save the current list of appointments. You can also load a different Appointment Schedule.



Loading an Existing Schedule

When you load an Appointment Schedule file using the Load command, the currently open schedule is saved, and the new file is loaded.

Load

- Choose **Load** from the File menu.
  The File Load dialog box appears containing the names of the existing

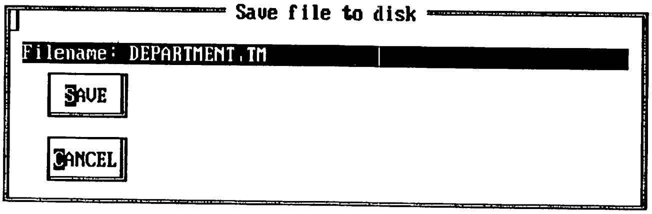
Appointment Schedule files (*.TM). For information about using the File Load dialog box, see the "Getting Started " chapter.

Saving Appointment Schedule Files

Appointment Schedules are automatically saved when you press Esc or click on the close box. In addition you can save a schedule using the **Save** command from the File menu.

Save

1. Choose **Save** from the File menu.
   The Save file dialog box (shown below) appears with the name of the current schedule in the Filename text box. If you want to save your changes to a different schedule, or keep different versions of the schedule, you may enter a new name in the file name text box.



Save file to disk

Filename: DEPARTMENT.TM

2. Select **Save** to save the schedule.

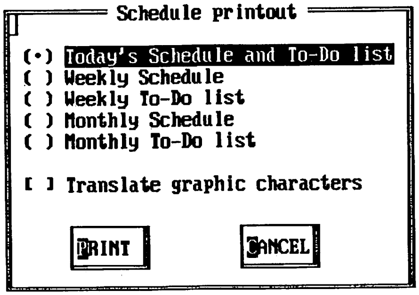
Printing your Schedule

You can print daily, weekly, or monthly copies of your schedules and To-Do lists.

Print

1. Choose **Print** from the File menu.

   This pops up a dialog box asking if you want to print today's Schedule and To-Do list, a full week-at-a-glance, or a full month of schedules or To-Do lists (beginning with today's date). You can also select whether or not to translate graphic characters.



Schedule printout

● Today's Schedule and To-Do list
○ Weekly Schedule
○ Weekly To-Do list
○ Monthly Schedule
○ Monthly To-Do list

☐ Translate graphic characters

2. Make your selection.
3. Select **Print**, and printer output box comes up for you to select where you want to print (LPT1, LPT2, LPT3, COM1, COM2, or to a disk file).
4. Select **Print**, and the Appointment Scheduler starts the printout.

Note: Even printers that support IBM graphic characters cannot print the special IBM graphic characters used in the Appointment Scheduler to show when an alarm is set (the musical notes). Therefore, the musical notes will be translated to the symbols in the list below. In addition, if the translation option is selected in the dialog box, the graphic characters used to create the brackets will be changed to the following normal printing characters:

Single musical note	#
Double musical note	%
Top part of appointment bracket	/
Vertical line part of bracket	|
Bottom part of bracket	\

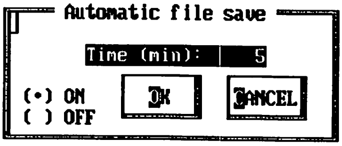
To cancel the printout once it has started, press Esc.

Autosave

You can have the scheduler save your file automatically at specified intervals. The **Autosave** command saves a file just like the **Save** command, but at a specific time interval that you set. It is recommended that you use this command to minimize any data loss from power outages.

Autosave is global to Notepads, Outlines, the Appointment Scheduler, and the Macro Editor. When Autosave is turned ON or OFF in any of these applications, it is turned ON or OFF in all of them.

1. Choose **Autosave** from the File menu.
   The Automatic file save dialog box appears.



Time (min): | 5

(•) ON
( ) OFF

2. Type a number representing the number of minutes between each automatic save. The default setting is for 5 minutes
3. Select either one of the automatic save option buttons:

   On: turns on the automatic save for the amount of time you've set. The default setting is ON.

   Off: turns off the automatic save.

4. Select **OK** to set the automatic save.
   At the specified interval your file is saved if you choose ON.

Exit without Saving

You can exit the Appointment Scheduler without saving any of the changes you made since you last saved. This is helpful if you've made changes and then decide you don't want to keep them.

- Choose **Exit Without Saving** from the File menu.
  This closes the window without saving the changes you've made since the last time you saved.

Note: This procedure is not the same as pressing Esc or clicking in the close box. These methods of exiting save your changes before exiting.

Running a Program at a Preset Time

If you want to set an alarm to run a program at a preset time, first, select the day and time you want to run the program. Then enter the text describing the program to be run next to the time on the Daily Schedule or in the Note text box in the Make appointment dialog box. (If you've forgotten how to do this, refer to the Making Appointments section.)

Enter the name of the program you want to run in the following way:

```
        note | file name
```

The note is any text you want to associate with the alarm, and file name is any legal DOS file name. This will cause the alarm to go off displaying the note and asking you if you want to run the program. You need to specify the full path so Desktop knows where to find the file to run, or make sure that it is in the same directory as Desktop or the directory is in the PATH statement. If the path name for the executable file will not fit in the appointment text box or you wish to pass parameters to the program, then create a batch file to run the file, and put the name of the batch file in the appointment.

If you want the program to automatically execute when the alarm goes off, without prompting you, then enter the program you want to run as follows:

```
|file name
```

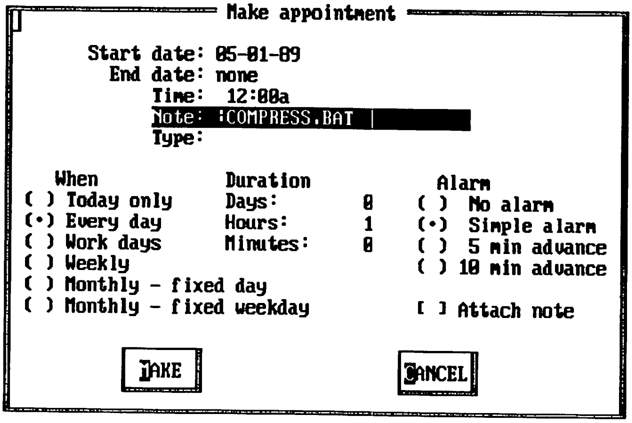
Here's what happens:

If the characters following the vertical bar ("|") look like an executable program, Desktop will issue the program file name to DOS and run the program. (Any executable file must have one of the following extensions: .BAT, .COM, or .EXE.) If the name does not look like an executable program, the file is loaded into a Notepad. See the following section for how to load a file into a Notepad at a preset time.

Note: Spaces are not required around the vertical bar ("|").

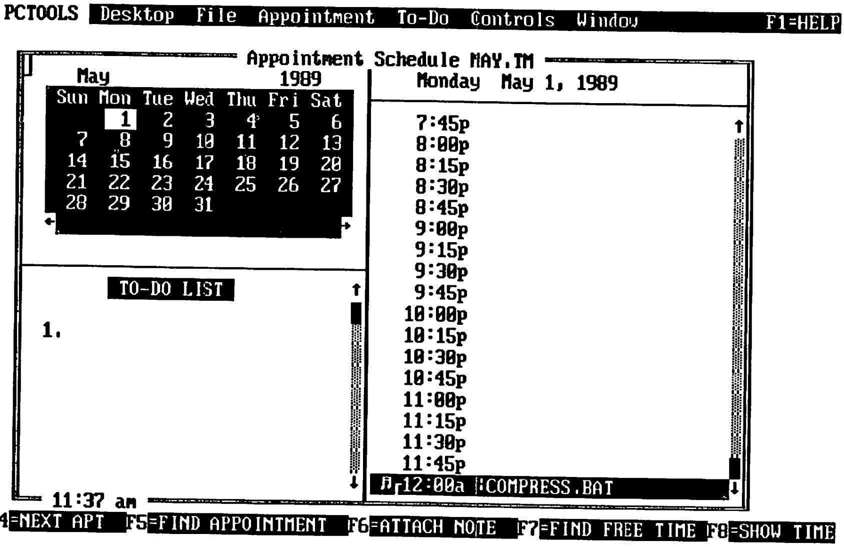
It is very convenient to start programs that do not require much input and take a fairly long time to run at a pre-defined time (usually when you are not using your computer, for example, at the end of the day or at lunch). Ideal programs to be run during off-hours are hard disk backup (to tape) and compression programs.

The following example shows an alarm which will run the PC Tools Utilities COMPRESS program to unfragment your hard disk at midnight. Since the program requires parameters, the alarm runs a batch program, COMPRESS.BAT, which starts the compress program. Set the alarm with the following settings in the Make Appointment dialog box below:



```
Start date: 05-01-89
  End date: none
      Time:  12:00a
      Note: |COMPRESS.BAT |
      Type:

  When                  Duration                  Alarm
( ) Today only          Days:          0       ( )  No alarm
(•) Every day           Hours:         1       (•)  Simple alarm
( ) Work days           Minutes:       0       ( )  5 min advance
( ) Weekly                                     ( ) 10 min advance
( ) Monthly - fixed day
( ) Monthly - fixed weekday                    [ ] Attach note
```

The screen below shows you how the Daily Schedule appears with the preset program:



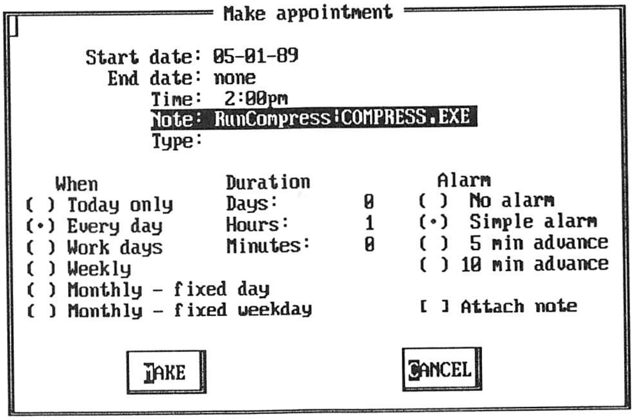
```
May                  1989      Monday  May 1, 1989
Sun Mon Tue Wed Thu Fri Sat
      1   2   3   4   5   6      7:45p
  7   8   9  10  11  12  13      8:00p
 14  15  16  17  18  19  20      8:15p
 21  22  23  24  25  26  27      8:30p
 28  29  30  31                  8:45p
                                 9:00p
                                 9:15p
                                 9:30p
                                 9:45p
                                10:00p
1.                              10:15p
                                10:30p
                                10:45p
                                11:00p
                                11:15p
                                11:30p
                                11:45p
                             ♫ 12:00a |COMPRESS.BAT
11:37 am
```

The file COMPRESS.BAT contains

```
\PCTOOLS\COMPRESS C: /CF
```

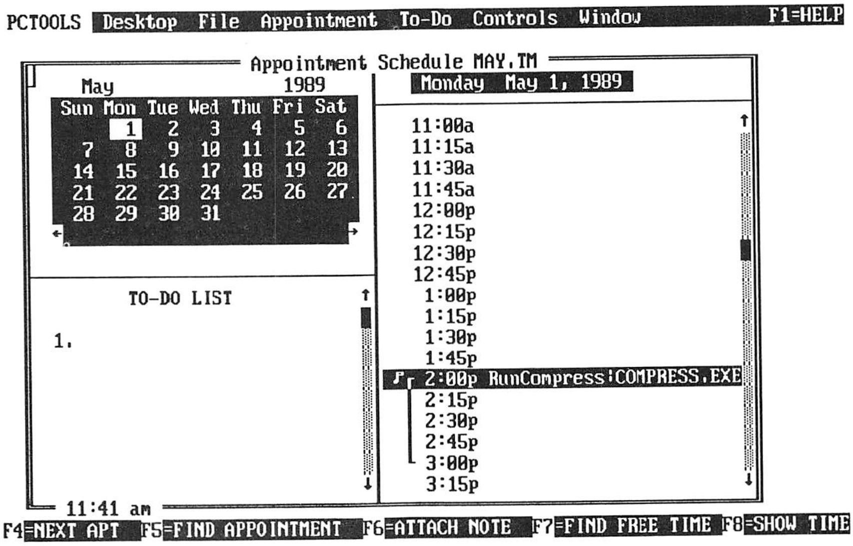
Since the text of the appointment has nothing prior to the "|", the program will automatically be run at midnight. Compress will run to completion.

If you want to set an alarm that will remind you to run Compress during the day, then set the following alarm:



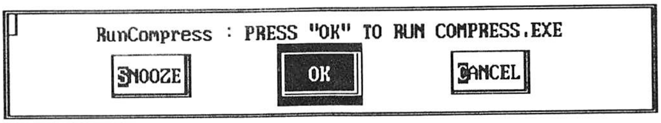
```
                  Make appointment

      Start date: 05-01-89
        End date: none
            Time:  2:00pm
            Note: RunCompress:COMPRESS.EXE
            Type:

    When                  Duration              Alarm
( ) Today only            Days:       0     ( )  No alarm
(•) Every day             Hours:      1     (•)  Simple alarm
( ) Work days             Minutes:    0     ( )  5 min advance
( ) Weekly                                  ( )  10 min advance
( ) Monthly - fixed day
( ) Monthly - fixed weekday                 [ ] Attach note
```

The screen below shows you how the Daily Schedule appears with the preset program:



```
11:00a
11:15a
11:30a
11:45a
12:00p
12:15p
12:30p
12:45p
 1:00p
 1:15p
 1:30p
 1:45p
 2:00p RunCompress:COMPRESS.EXE
 2:15p
 2:30p
 2:45p
 3:00p
 3:15p
```

At 2:00 the alarm will go off and display the following:



RunCompress : PRESS "OK" TO RUN COMPRESS.EXE

If you select OK, Compress will be run just as if you had typed Compress at the DOS prompt.

Loading a Notepad at a Preset Time

If you want to set an alarm to load a file into a Notepad, first, select the day and time you want to load the file. Then enter the text associated with an alarm (the name of the appointment) next to the time on the Daily Schedule or in the Note text box in the Make appointment dialog box. (If you've forgotten how to do this, refer to the Making Appointments section.)

Type the file name to be loaded into the Notepad in the following way:

```
note | file name
```

The note is any text you want to associate with the alarm, and the file name is any legal DOS file name. This setup will cause the alarm to go off, displaying the note and asking if you want to load the file into a Notepad. You need to specify the full path so Desktop knows where to find the file to load, or make sure that it is in the same directory as Desktop or the directory is in the PATH statement.

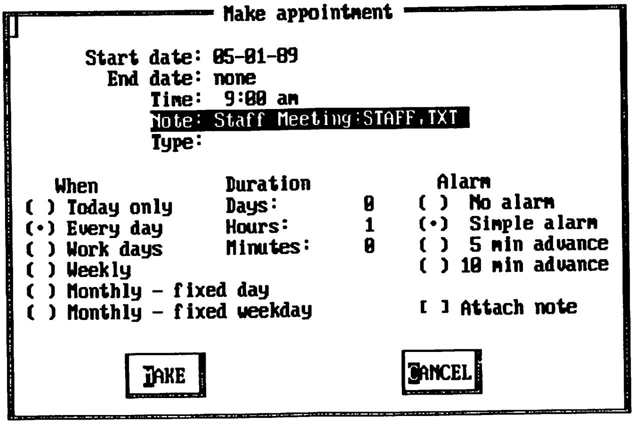
If you want the file to be automatically loaded into a Notepad when the alarm goes off, without prompting you, then you would enter the file name to be loaded as follows:

```
|file name
```

When nothing follows the "|" and there is an attached note, the attached note is loaded when the alarm goes off.

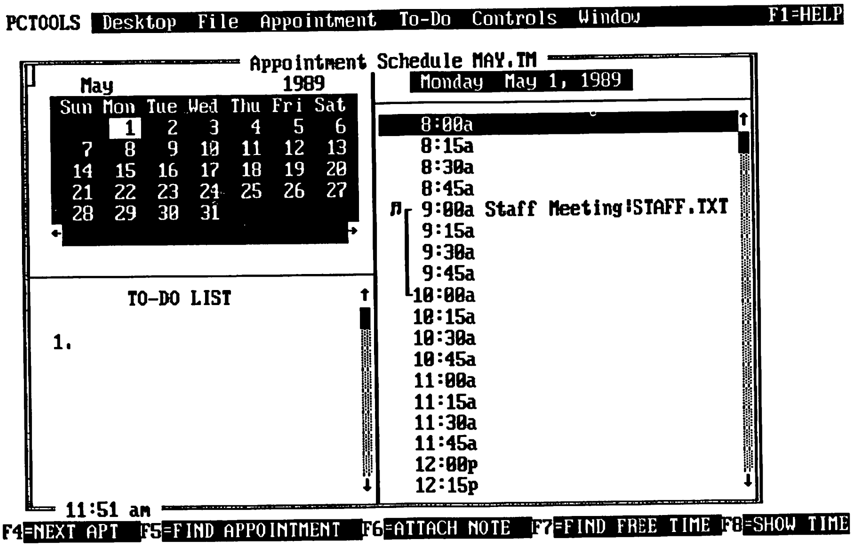
Attaching a document to an alarm is a handy way to pull up a notes file when an alarm goes off so it is ready for a meeting. For example, assume you have been keeping notes for a staff meeting in a document named STAFF.TXT, created with Notepads. 9:00 am tomorrow is your staff meeting. You don't want to forget the meeting, and you want to have your notes ready on the screen before you start the meeting.

The screen below shows you an example of how this looks when you set the appointment in the Make Appointment dialog box:



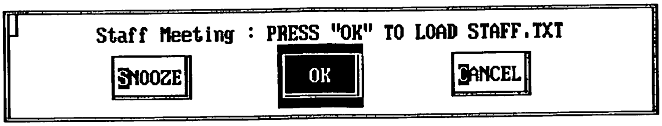
```
                    Make appointment

        Start date: 05-01-89
          End date: none
              Time:  9:00 am
              Note: Staff Meeting:STAFF.TXT
              Type:

   When                  Duration             Alarm
( ) Today only           Days:        0    ( )  No alarm
(•) Every day            Hours:       1    (•)  Simple alarm
( ) Work days            Minutes:     0    ( )  5 min advance
( ) Weekly                                 ( ) 10 min advance
( ) Monthly - fixed day
( ) Monthly - fixed weekday                [ ] Attach note

          MAKE                          CANCEL
```

The screen below shows you how the Daily Schedule appears with a file name:



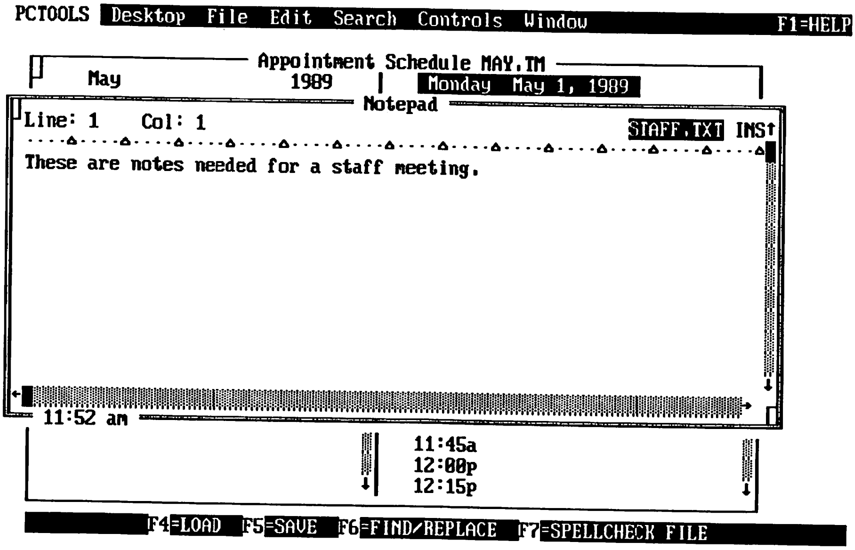
```
PCTOOLS  Desktop  File  Appointment  To-Do  Controls  Window            F1=HELP
                      Appointment Schedule MAY.TM
   May              1989          Monday  May 1, 1989
 Sun Mon Tue Wed Thu Fri Sat
       1   2   3   4   5   6        8:00a
   7   8   9  10  11  12  13        8:15a
  14  15  16  17  18  19  20        8:30a
  21  22  23  24  25  26  27        8:45a
  28  29  30  31                 A┌ 9:00a Staff Meeting:STAFF.TXT
                                  │ 9:15a
                                  │ 9:30a
                                  │ 9:45a
            TO-DO LIST            └10:00a
                                   10:15a
  1.                               10:30a
                                   10:45a
                                   11:00a
                                   11:15a
                                   11:30a
                                   11:45a
                                   12:00p
                                   12:15p
    11:51 am
F4=NEXT APT  F5=FIND APPOINTMENT  F6=ATTACH NOTE  F7=FIND FREE TIME  F8=SHOW TIME
```

The alarm will alert you about the meeting at 8:50 (ten minutes before the meeting starts) with a beep and a note on your computer's screen



```
        Staff Meeting : PRESS "OK" TO LOAD STAFF.TXT

        SNOOZE            OK            CANCEL
```

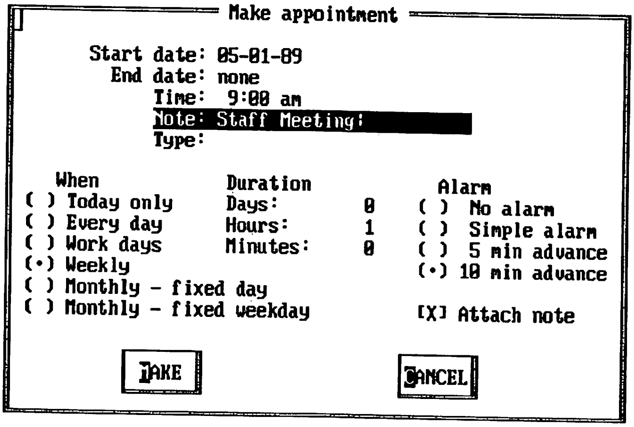
Selecting OK will cause the STAFF.TXT file to be loaded into a Notepad.


PCTOOLS
Desktop File Edit Search Controls Window
F1=HELP
Appointment Schedule MAY.TM
May
1989
Monday May 1, 1989
Notepad
STAFF.TXT
INS
11:52 am
11:45a
12:00p
12:15p
F4=LOAD F5=SAVE F6=FIND/REPLACE F7=SPELLCHECK FILE

Line: 1 Col: 1

These are notes needed for a staff meeting.

Alternately, you could have attached a note at the time the alarm was set which contains the meeting notes.



Start date: 05-01-89
End date: none
Time: 9:00 am
Note: Staff Meeting!
Type:

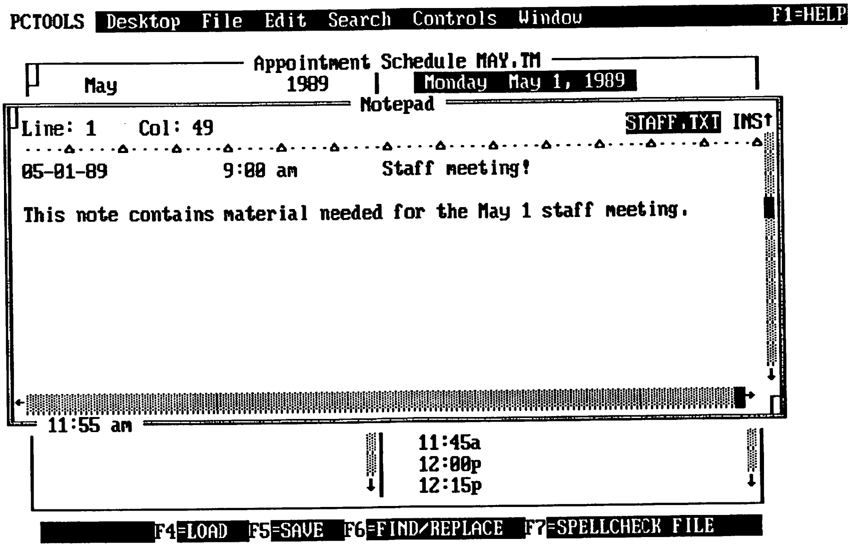
When
○ Today only
○ Every day
○ Work days
● Weekly
○ Monthly - fixed day
○ Monthly - fixed weekday

Duration
Days: 0
Hours: 1
Minutes: 0

Alarm
○ No alarm
○ Simple alarm
○ 5 min advance
● 10 min advance

☒ Attach note

When the alarm goes off, the attached note pops up (below).



```
Line: 1   Col: 49
05-01-89            9:00 am        Staff meeting!

This note contains material needed for the May 1 staff meeting.
```

Using Macros with the Appointment Scheduler

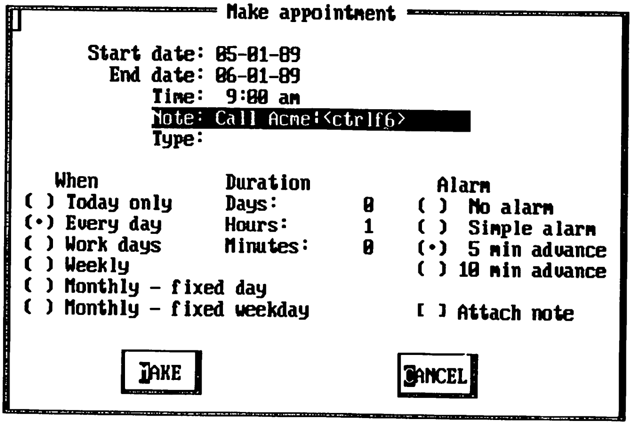
Putting macros into your appointment notes can be extremely useful. By predefining a macro, you can have your computer system do almost any task automatically or with greatly reduced input from you. Also, since the macro editor is an internal PC Tools Desktop application, you won't have to create special batch files to execute long commands. And since macros are independent of the appointment scheduler, you can use them anytime. Note that only the last loaded scheduler's alarms are active.

If you want to set an alarm to run a macro, first, select the day and time you want to run the macro. Then enter the text associated with an alarm (the name of the appointment) next to the time on the Daily Schedule or in the Note text box in the Make appointment dialog box. (If you've forgotten how to do this, refer to the Making Appointments section.)

Type the macro in the following way:

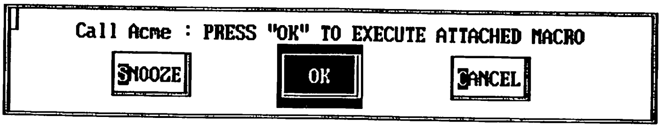
```
appointment name | macro name
```

The screen below shows you how this macro looks when you set the appointment in the Make Appointment dialog box:



```
                    Make appointment

          Start date: 05-01-89
            End date: 06-01-89
                Time:  9:00 am
                Note: Call Acme¦<ctrlf6>
                Type:

   When               Duration              Alarm
( ) Today only        Days:        0    ( )  No alarm
(•) Every day         Hours:       1    ( )  Simple alarm
( ) Work days         Minutes:     0    (•)  5 min advance
( ) Weekly                              ( ) 10 min advance
( ) Monthly - fixed day
( ) Monthly - fixed weekday             [ ] Attach note
```

The vertical bar indicates that a macro name follows. When the macro name is preceded by an appointment name, as the above example shows, the alarm will go off, then display a message box (below) on the screen with the appointment name. In addition, the message box will indicate that a macro is attached and ask if you want to run it.

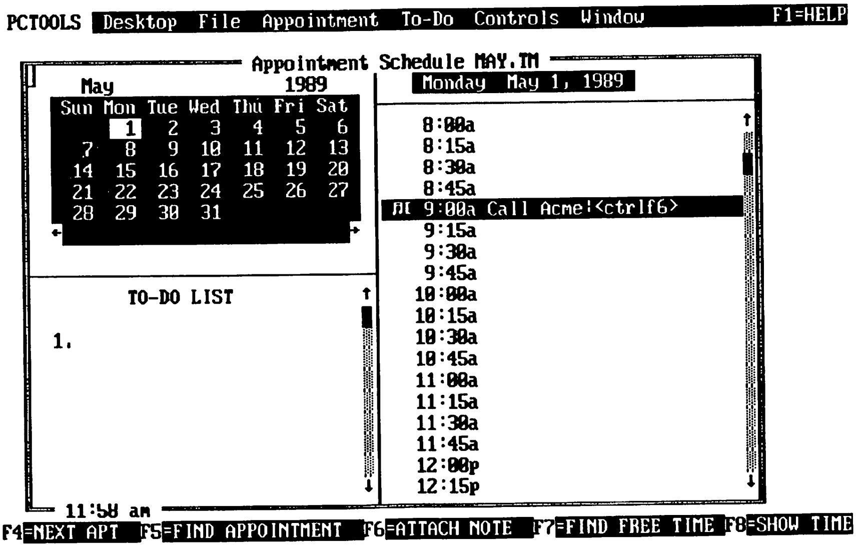


```
Call Acme : PRESS "OK" TO EXECUTE ATTACHED MACRO
```

If you want the macro to automatically execute when the alarm goes off, type the macro in the note box the following way:

```
| macro name
```

The screen below shows you how the Daily Schedule appears with a macro:



```
8:00a
8:15a
8:30a
8:45a
9:00a Call Acme!<ctrlf6>
9:15a
9:30a
9:45a
10:00a
10:15a
10:30a
10:45a
11:00a
11:15a
11:30a
11:45a
12:00p
12:15p
```

The following pages contain examples of using macros in your appointments. All these examples are contained in the file SAMPLE.PRO. You can modify them, delete them, or expand on them to suit your tastes. They can be used from DOS, or inside other running programs, as well as in the Desktop Appointment Scheduler.

Running a Program at a Preset Time

It is very convenient to start programs that do not require much input and take a fairly long time to run at a pre-defined time (usually when you are not using your computer, for example, at the end of the day or at lunch). Ideal programs to be run during off-hours are hard disk backup (to tape) and compression programs.

The following example will run the PC Tools Utilities COMPRESS program to unfragment your hard disk. You can use this example (or modify it) or use the method described above.

1. First, determine the date and time you want to run Compress. For this example, let's assume you want to run it at 5:00 pm every day.
2. Run Desktop (or press the hotkey to bring it up if it is resident).
3. Select the Appointment Scheduler from the main Desktop menu.
4. Tab into the appointment list and scroll to 5:00 pm.
5. Enter the following text on the 5:00 appointment time line:

```
|<ctrlf5> run compress
```

The "run compress" portion is just a note for you so you know what the appointment will do. The alarm manager will ignore it. It is the <ctrlf5> macro that really runs Compress.

6. Press the Enter key, and the Make Appointment dialog box appears.
7. Select work days (assuming you want to compress your hard disk only on days you use it), and choose simple alarm. You can make the duration short, but we recommend that it cover at least the maximum time for your program (Compress in this case) to run. Select 1 hour.

   Your appointment is now set.

Next, you need to define what you want "ctrlf5" to do using the Macro Editor. In this case, we have already created a sample Macro file (SAMPLE.PRO) that has this macro in it. Before it will work, however, you need to tell the Macro Editor to make it active.

1. Choose Macro Editor from the main Desktop menu.
2. From the File Load dialog box, select the file SAMPLE.PRO.
3. Choose **Macro activation** from the File menu.
4. Select the "active everywhere" option.
   All the SAMPLE.PRO macros are now active and ready to use until you "erase all macros" (from the Controls menu).

Here is what the ctrlf5 macro looks like:

```
This macro runs the PC Tools Utilities Compress program:

<begdef><ctrlf5>cd\PCTOOLS<enter>Compress C: /CF <enter>
<enddef>
```

The first line is just a comment. The <begdef> starts the macro definition. <ctrlf5> is the key sequence that will start the macro running (the macro name). The actual macro text starts next and will change to the PCTOOLS subdirectory then run the COMPRESS program for drive C: with the /CF option, which will do a full compression of your hard disk. The <enddef> ends this macro.

IMPORTANT: If you want to run a program (as in this case, running COMPRESS) using a macro from the Appointment Scheduler, you must make sure that you do not have any running DOS programs (except for Desktop). You can either be at the DOS prompt or in any of the Desktop applications when your macro appointment alarm goes off, but you can't be, for example, in Lotus 123. DOS will need to be available to run the program, which it is not if it is busy running another program.

That's all there is to it. Your macro is defined and your appointment alarm is set. Instead of giving you the normal dialog box alarm, it will execute your macro and compress your hard disk for you automatically every work day at 5:00 pm. You may continue to use your system normally. Make sure that at 5:00, you are not running any programs (except that you may be running Desktop resident).

Attaching a Document to an Alarm

Attaching a document to an alarm is a handy way to pull up a notes file when an alarm goes off so it is ready for a meeting. For example, assume you have been working on a document created with Notepads named SAMPLE.TXT. At 10:00 am tomorrow, you want to call your client (ACME Corp.) and go over the notes. You don't want to forget the meeting and you want to have your notes ready, on the screen when you call. Additionally, you would like to pull up the SAMPLE.DBF database and find ACME's phone number automatically so you can call them.

The following example will alert you about the meeting at 9:55 (five minutes before you are to call) with a beep and a note on your computer's screen. Once you acknowledge the alarm, the macro will start Desktop, pull up the SAMPLE.TXT file for your reference during the call, and find ACME in the SAMPLE.DBF database.

First, you need to create the appointment in the appointment scheduler:

- Scroll to 10:00 am tomorrow in your appointment list and type the following:

```
Call ACME |<ctrlf6>
```

The <ctrlf6> macro in your SAMPLE.PRO file (which you made active in the last example), looks like this:

```
Pop up Desktop and load SAMPLE.TXT, and find ACME in SAMPLE.DBF
database

<begdef><ctrlf6><desk>NSAMPLE.TXT<enter><desk>DSAMPLE.DBF
<enter><alts>TACME<alts><altc><enddef>
```

All the macro commands are just what you would type from the keyboard (except <desk> which replaces the Desktop hotkey). <begdef><ctrlf6> defines the name of this macro. <desk> pulls up the desktop main menu. "N" selects Notepads, and SAMPLE.TXT<enter> loads your notes file. The <desk>DSAMPLE.DBF<enter> sequence loads the SAMPLE database, and the <alts>TACME<alts><altc> character string does the search for ACME. <enddef> finishes the macro.

Of course, you may not wish to create a special macro for each appointment as this can be time consuming. The above example is handy, but a general version might be more practical. For example, instead of having the SAMPLE.TXT file and ACME fixed in the macro, it could ask your for these names. All you do is supply the file to load and the customer to search for. Here is a macro that will do this for you:

```
Pop up Desktop and ask which NOTEPADS file to load, and ask
which customer to find in the SAMPLE.DBF database:

<begdef><ctrlf7><desk>N<vfld>..<vfld><enter><desk>DSAMPLE.DBF
<enter><alts>T<vfld>..<vfld><alts><altc><enddef>
```

This uses the variable fill-in-the-blanks macro command to get the names from you during execution of the macro.

To use this macro, you could create an appointment like the following:

```
          Call ACME |<ctrlf7>
```

in your appointment schedule.

Automatically Dialing Phone Numbers

In order to automatically dial a phone number, you must have a Hayes (or compatible) modem. Also, your telephone should be connected to the same line as the modem so you can pick up the call after the modem dials the number. Here's an example of a macro that will alert you that you are to call ACME, then do a general lookup in the SAMPLE.DBF database, find the phone number and dial it automatically for you:

```
load SAMPLE.DBF, ask for client to find, then dial the phone
number

<begdef><ctrlf8><desk>DSAMPLE.DBF<enter><alts>T<vfld>..<vfld>
<alts><altc><altc>A<cmd>d15<enter><enddef>
```

The last line of this macro selects the Autodial command from the database controls menu then waits 7 seconds using the macro delay command. After you hear your modem dial the phone number, you should pick up the handset of the phone attached to the same line as the modem. The modem will disconnect and you will be on the line when your client answers the phone. You may need to vary the duration of the delay for your modem. If it hangs up the phone too quickly, increase the delay.

The following appointment will invoke the above example:

```
Call ACME |<ctrlf8>
```

The alarm will go off and wait for you to acknowledge it. Then the macro will load Desktop and the SAMPLE.DBF database and will pause, waiting for you to type "ACME". Then it will dial the number for you.

Note: When using the autodialer feature with a database, make sure the phone number is defined before other number fields in your database. See the database chapter for more information on autodialing.

Also, remember to include the area code and long distance code (usually a "1") in your long distance phone numbers. If your phone requires that you dial a "9" or other number to get an outside line, this will need to be included in your database as well in order for autodialing to work. The autodialer will faithfully dial all the digits in the phone number. If the number is NOT long distance, make sure to omit the 1 and area code.

Creating a Notes File for the Day

You may find that the Appointment Scheduler To-Do list doesn't offer all the flexibility you want. It is very useful for keeping track of important tasks as they roll forward from day to day. However, if you would like to have a standard notepad to enter free-form text, here is a quick macro to do this:

```
Create (or load) a daily notepad file:

<begdef><ctrlN><desk>N<date>.TXT<enter><enter><enddef>
```

Anytime you press Ctrl-N, Notepads will create or load a file whose name is today's date (for example, 3-20-89.TXT is the file for March 20th, 1989). You can enter or edit your thoughts using the full Notepads editor and put them away with just a touch of the ESC key or click of the mouse in the close box.

Dialing a Remote Service and Transferring Files

You can use the Appointment Scheduler to dial a remote service (such as CompuServe and MCI) to get your mail or receive or transmit a file when the rates are low. Your PC Tools disk includes sample scripts for automated connection to many services. Here is an example of a macro to invoke MCI and read your mail:

```
Read MCI mail:

<begdef><ctrlf9><desk>T3<enter><cmd>d20:0<enter><esc><esc>
<enddef>
```

Enter the following appointment with a simple alarm to execute this macro:

```
|<ctrlf9> read MCI mail
```

You need to make sure that your account number and password have been entered into the MCI.SCR file, and that the MCI phone number has been put into PHONE.TEL before using this macro. You can do this by editing the file with Notepads.

Here's how it works:

<desk> brings up PC Tools Desktop. "T" selects the Telecommunications section. Option 5 on this list is MCI using the MCI.SCR file. Selecting option 5 will dial the MCI phone number and execute the script file which will log on, read your mail, then log off. The delay command will wait for 20 minutes and then issue two escape keys which will terminate this macro, leaving you at the same point as you were before the macro was run.

You can create different macros easily by just changing the number of the service you want. For example, changing the "3" to "6" will dial CompuServe, using the sample PHONE.TEL file we provide.

Telecommunications

Telecommunications enables you to connect your PC to virtually any other computer system. With a direct connection via cables (null modems), you can use Telecommunications to transfer files between different types of computers. For example, you could transfer files to and from the mainframe computer where you work or a friend's computer. With a Hayes® compatible modem, you can dial out and connect to local bulletin board systems or commercial services such as CompuServe® to take advantage of such facilities as electronic mail, conferencing, and data querying.

Telecommunications has the following features:

- Supports baud speeds from 300 to 19200
- Uses any of your PC's communications ports
- Transfers files in either XMODEM or ASCII protocols
- Automates procedures with script files
- Supports background file transfers

Telecommunications comes with an optional feature for operating in the background so you can transmit and receive data while running other applications; for example, you don't have to quit your spreadsheet to receive the latest stock quotes from the New York Stock Exchange. Or you could check your electronic mail without leaving your word processor.

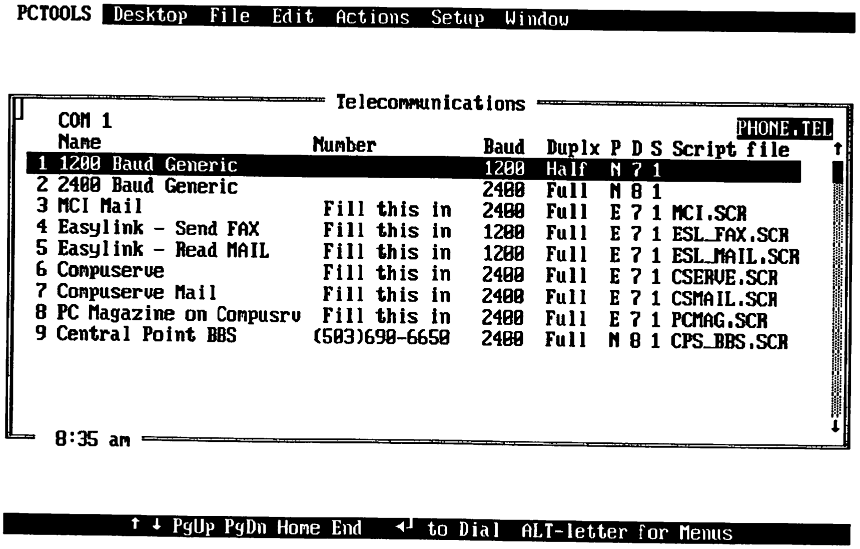
PC Tools Desktop also supplies you with several script files to automatically give you access to major computer networks (such as MCI®, CompuServe, EasyLink, and other major bulletin boards) so connections can be as easy as a single keystroke or click of the mouse button. All you have to do is select an entry and choose the menu item to dial the phone and make the connection. From there PC Tools Desktop performs your log in sequence once you have added your password to the script file. Instructions are also provided for building your own scripts, which are analogous to batch files in DOS.

Please note that you need to have your script files in the same subdirectory you have your Desktop program or Desktop will not be able to find and run the script. If you receive the message "unable to open file" when trying to run a script, just move or copy the script file into the PC Tools subdirectory.

Starting Telecommunications

Once Telecommunications is chosen from the Desktop pull-down menu, the default phone directory file (PHONE.TEL) is loaded into the window and the application's horizontal menu appears across the top of the screen.

The illustration below shows what you'll see when you open Telecommunications:



```
                             Telecommunications
   COM 1                                                             PHONE.TEL
   Name                       Number           Baud  Duplx P D S Script file
 1 1200 Baud Generic                           1200  Half  N 7 1
 2 2400 Baud Generic                           2400  Full  N 8 1
 3 MCI Mail                    Fill this in    2400  Full  E 7 1 MCI.SCR
 4 Easylink - Send FAX         Fill this in    1200  Full  E 7 1 ESL_FAX.SCR
 5 Easylink - Read MAIL        Fill this in    1200  Full  E 7 1 ESL_MAIL.SCR
 6 Compuserve                  Fill this in    2400  Full  E 7 1 CSERVE.SCR
 7 Compuserve Mail             Fill this in    2400  Full  E 7 1 CSMAIL.SCR
 8 PC Magazine on Compusrv     Fill this in    2400  Full  E 7 1 PCMAG.SCR
 9 Central Point BBS          (503)690-6650    2400  Full  N 8 1 CPS_BBS.SCR

   8:35 am
```

From top to bottom, the Telecommunications window contains the following parts:

- **Telecommunications Horizontal Menu bar:** contains the names of pull-down menus and on-line Help for quick answers and guidelines.
- **Window border:** indicates the active window with a double border. The inactive window has a single border. The time is also shown on the lower left corner of the active window's border.
- **Close box:** used with the mouse to close the window and escape the application.
- **File name:** shows the name of the current phone directory.
- **Telecommunications window:** contains summary information for each item in the phone directory. For specific descriptions of the individuals fields, see "Editing phone directory entries."

COM Port: shows which communications port your modem is connected.

Name: contains a label you've assigned for the entry. It commonly contains the name of the computer service, like CompuServe, or the name of anyone you send files to. Type the number to the left of the name to quickly select the entry you want.

Number: contains the phone number to dial to connect with the remote computer. If this number is blank, you will be prompted for the number when you choose dial.

Baud: the speed at which the communication takes place. The higher the number, the faster the transmission.

Duplex: describes how computers treat transmitted data. Most systems are full duplex.

PDS: contains information about the character format used for transmission.

When you register for a computer information service or receive permission to access another computer system, you should get a password and a manual explaining what PDS, baud, and duplex settings are required to connect to the system.

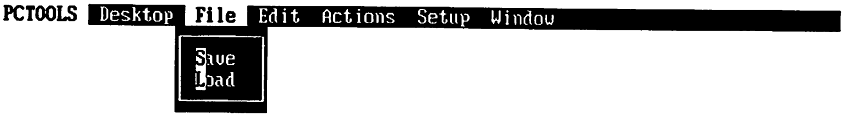
Script file: contains the name of a file to give instructions to Telecommunications for automatically performing specified operations. Script files are useful for logging onto a system or for other procedures you want to automate and are written and stored in ASCII or PC Tools Desktop text files.

Scroll bar: used with the mouse to move, or "scroll" through the phone directory entries.

- **Message bar:** contains messages to guide you through your work. When you open Telecommunications, the short cut keys are displayed. When highlighted short cut keys (in red on color monitors) appear on the bottom line, the associated commands can be invoked by pressing the highlighted function key or positioning the mouse cursor on any portion of the command or highlighted key and clicking the mouse. For example, to hang up the phone just press F8 or click anyplace on "F8=HANGUP" with the mouse; this breaks your connection.

Using Phone Directory Files

Using Telecommunications, you can keep track of names and phone numbers in one or multiple phone directory files. For example, you could have one directory for work related numbers and another directory for stock related numbers. Each directory can have as many as 200 entries. The File pull-down menu below provides a list of commands for working with your phone directory files.

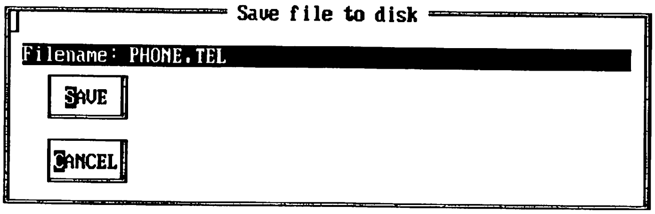


Saving Phone Directory Files

Phone directories are automatically saved when you press Esc or click on the close box if a change was made. In addition you can save a file using the **Save** command from the File menu.

Save

1. Choose **Save** from the File menu.
   The Save file dialog box (shown below) appears with the name of the current file in the Filename text box. If you want to save your changes to a different phone directory, or keep different versions of the phone directory, you may enter a new name in the filename text box.



Filename: PHONE.TEL

2. Select the **Save** command button.

Creating a New Phone Directory

Although PC Tools Desktop is shipped with a default phone directory (PHONE.TEL), you may want to create a new directory.

Load

1. Choose **Load** from the File menu.
   The File Load dialog box appears containing the names of the existing files, drives and directories. Enter a name for your new directory, for example, WORK.TEL, and choose the **New** command button. An empty phone directory will appear on your screen.

   For information about using the File Load dialog box, see Using the File Load Dialog Box in the "Getting Started" chapter.

Loading an Existing Phone Directory

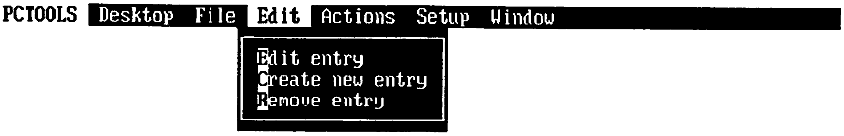
When you load a Telecommunications file using the Load command, any Telecommunication files currently open are replaced by the file you are loading. Any changes made to the current directory are lost when you load another file, so be sure to save changes to your file before opening another one.

Load

- Choose **Load** from the File menu.
  The File Load dialog box appears containing the names of the existing files, drives and directories. For information about using the File Load dialog box, see the "Getting Started " chapter.

Editing Phone Directory Entries

To add new entries to a phone directory file or make changes to existing entries (for example, change a name, phone number, a transmission setting, the file name for a script file, or add and remove names and phone numbers), you need to use the commands found on the Edit pull-down menu below.

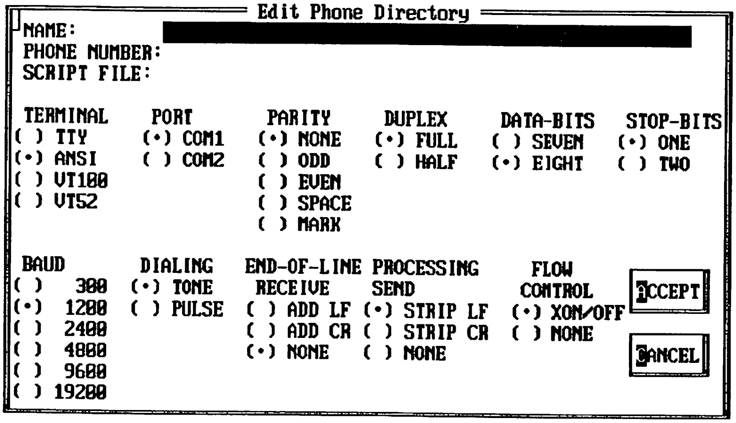


Edit Entry

Your modem should be configured so that Data Carrier Detect (DCD or CD) and Data Set Ready (DSR) reflect the actual state of the carrier detect and DSR signals. Some modem manufacturers refer to this state as "True carrier detect" and "True DSR."

Note: Do *not* use the setting "Carrier detect always on" or "DSR always on." Consult your modem owner's manual for information on configuring your modem.

1. Select the line containing the information you want to change by typing the number to the left of the entry, using the arrow keys, or by clicking on the entry.
2. Choose **Edit entry** from the Edit menu.
   The Edit Phone Directory dialog box is displayed.



```
Edit Phone Directory
NAME:
PHONE NUMBER:
SCRIPT FILE:

TERMINAL     PORT       PARITY       DUPLEX     DATA-BITS    STOP-BITS
( ) TTY      (•) COM1   (•) NONE     (•) FULL   ( ) SEVEN    (•) ONE
(•) ANSI     ( ) COM2   ( ) ODD      ( ) HALF   (•) EIGHT    ( ) TWO
( ) VT100               ( ) EVEN
( ) VT52                ( ) SPACE
                        ( ) MARK

BAUD         DIALING    END-OF-LINE PROCESSING  FLOW
( )   300    (•) TONE    RECEIVE     SEND       CONTROL      ACCEPT
(•)  1200    ( ) PULSE  ( ) ADD LF (•) STRIP LF (•) XON/OFF
( )  2400               ( ) ADD CR ( ) STRIP CR ( ) NONE
( )  4800               (•) NONE   ( ) NONE                  CANCEL
( )  9600
( ) 19200
```

3. Select any of the following transmission parameters:

- **Name text box:** where you type the name of a person, a company, or a computer service. The field may contain as many as 50 characters.

- **Phone number text box:** where you type a phone number and any additional commands used by your modem to control the phone dialing. Telecommunications ignores spaces, dashes, and parenthesis, so you can type a phone number as you normally would: (800) 555-9978. This field may contain as many as 50 characters, although only 25 can be displayed when you return to the main phone directory screen. Leave the phone number text box blank if you want to set up the communications settings only.

- **Script file text box:** where you type the file name and .SCR extension for your script file containing commands for automated procedures. In PC Tools Desktop, script files can be used to log onto a system, read the electronic mail, download, or upload a file.

- **Terminal:** shows that Telecommunications has the following emulation modes: TTY (used most frequently by information services and electronic bulletin boards), ANSI (used on electronic bulletin boards for ASCII extended character sets such as graphics, color, and animation), VT100 (emulates DEC's VT100 terminal), and VT52 (emulates DEC's VT52 terminal).

- **Port:** selects which serial port is to be used for communications. COM 3 and 4 ports are supported only if you are using PS/2 Models.

- **Duplex:** selects which type of setting is used to transmit data. A full duplex setting transmits data simultaneously in two directions, with the remote computer echoing back any characters sent to it. A half setting transmits in one direction, causing each character to be displayed as you type. If you can't see what you are typing, change the setting to half. If you see two of every character, change the setting to full. Most systems are full duplex.

- **PDS:** Defines the way characters will be transferred. If both systems do not have the same PDS settings, either nothing or nonsensical characters is transferred. The three components of PDS are parity, data bits, and stop bits.

  Parity: Sometimes a parity bit is used to help achieve correct communication. A parity bit usually takes the place of the eighth data bit and will make the sum of each character's bits come out even or odd. Even parity makes the sum of the character's bits come out even, while odd parity makes the sum of a character's bits come out odd.

  If the receiving computer adds up the bits and gets an unexpected number, then the character was transmitted incorrectly. Parity must match the requirements of the remote computer. The most common settings are none or even.

Data bits (D): selects the number of actual data bits (7 or 8) in a transmitted character. The number value depends on the requirements of the remote computer. Most systems use 8.

Stop bit (S): selects the number of bits (1 or 2) used to indicate the end of a character. The selection depends on the requirements of the remote computer. Most systems use 1.

- **Baud:** selects the speed at which the transmission takes place. The higher the number, the faster the transmission. The number must be less than or equal to the manufacturer's rated speed for the modem you are using and must match the system you are calling.
- **Dialing:** sets the modem command for touch-tone or pulse (rotary) dialing.
- **End-of-line processing:** selects the characters used to mark the end of the line when you press Enter and on ASCII transfers. Check the manual that came with your subscription service for the correct setting. The defaults are set for normal bulletin board communications. UNIX® systems use a line feed (LF) only.

Receive

Add LF: the sending computer system uses a CR (carriage return) only to mark the end of a line. Telecommunications adds a LF (line feed) for incoming transmissions.

Add CR: the sending computer system uses a LF only to mark the end of a line. Telecommunications adds a CR for incoming transmissions.

None: the sending computer system uses CR/LF to mark the end of a line and does not modify the data.

Send

Strip LF: the receiving computer system expects CR only to mark the end of a line. Telecommunications removes the LF for outgoing transmissions.

Strip CR: the receiving computer system expects LF only to mark the end of a line. Telecommunications removes the CR for outgoing transmissions, and the Enter key sends LF.

None: the receiving computer system expects CR/LF to mark the end of a line. Since Telecommunications sends CR/LF, no character deletion is needed; the Enter key sends a CR.

- **Flow Control:** controls the flow of data between two computers with less chance of data loss. This setting is needed when one of the computers needs time to accept a file from the other. When the receiving computer sends an XOFF character (transmission off), the sending computer stops transmission. The sender does not restart transmission until the sender sends an XON character (transmission on.) This setting must match on both computers. Check the manual you received with your computer service subscription for the correct setting.

  XON/OFF: helps buffer data flow between two computers.

  None: data is buffered somewhat, but there is more chance to lose data.

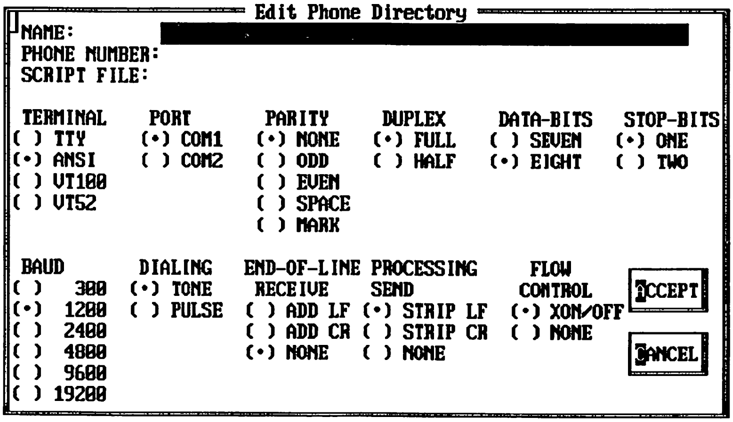
4. Select the **Accept** button.
   The dialog box closes, your editing changes are saved, and you return to the application screen.

Creating Phone Directory Entries

PC Tools Desktop has some example phone directories already set up to help you get started. For many of these services you will need to register for an account.

Create New Entry

1. Choose **Create new entry** from the Edit menu.
   The Edit dialog box is displayed with the default values selected to give you an opportunity to change any settings.



```
                    Edit Phone Directory
NAME:
PHONE NUMBER:
SCRIPT FILE:

TERMINAL     PORT      PARITY     DUPLEX     DATA-BITS    STOP-BITS
( ) TTY      (•) COM1  (•) NONE   (•) FULL   ( ) SEVEN    (•) ONE
(•) ANSI     ( ) COM2  ( ) ODD    ( ) HALF   (•) EIGHT    ( ) TWO
( ) VT100              ( ) EVEN
( ) VT52               ( ) SPACE
                       ( ) MARK

BAUD         DIALING   END-OF-LINE PROCESSING     FLOW
( )    300   (•) TONE   RECEIVE    SEND          CONTROL     ACCEPT
(•)   1200   ( ) PULSE ( ) ADD LF (•) STRIP LF  (•) XON/OFF
( )   2400             ( ) ADD CR ( ) STRIP CR  ( ) NONE
( )   4800             (•) NONE   ( ) NONE                   CANCEL
( )   9600
( ) 19200
```

2. Select the options you want to change.
3. Select **Accept.**
   The Edit dialog box goes away and your new entry appears selected in the phone directory window.

Note: If a message appears telling you there is no more room (your file is full), you need to either remove some existing entries that you no longer use or add the entries to an alternate phone directory.

Removing Phone Directory Entries

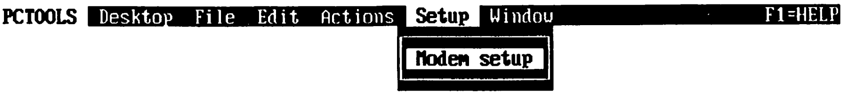
If you decide you want to eliminate a number from your phone directory, you can use the **Remove** command.

Remove Entry

1. Select the entry you want to permanently remove.
2. Choose **Remove entry** from the Edit menu.
   A message box appears asking you to confirm that you want to delete the entry.

Initializing Your Modem

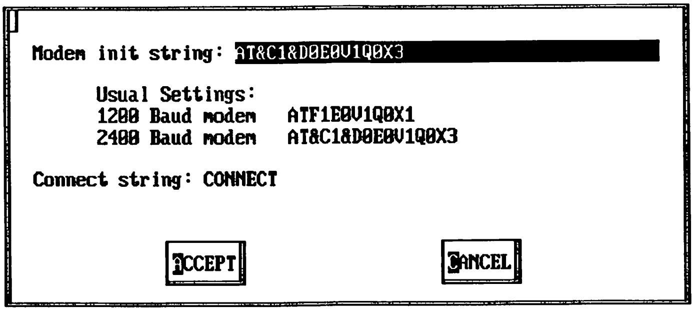
The Setup menu provides a command for initializing your modem before going on-line.



Modem Setup

The Modem Setup command is used to initialize the modem before starting communications. The default string works with all 2400 baud modems and most 1200 baud modems. (Notice that in this situation"2400 baud modem" refers to the type of modem, not the rate of transmission.) For some 1200 baud modems it may be necessary to change the modem setup to the Usual 1200 Baud modem setting. If you are familiar with the Hayes Standard AT Command Set, you may wish to change the init string to suit your requirements. If you have a problem entering the on-line screen or establishing a phone connection, you may need to change the modem settings.

1. Choose **Model Setup** to change the modem init string.
   The Modem Setup dialog box appears.



Modem init string: AT&C1&D0E0V1Q0X3

Usual Settings:

1200 Baud modem	ATF1E0V1Q0X1
2400 Baud modem	AT&C1&D0E0V1Q0X3

Connect string: CONNECT

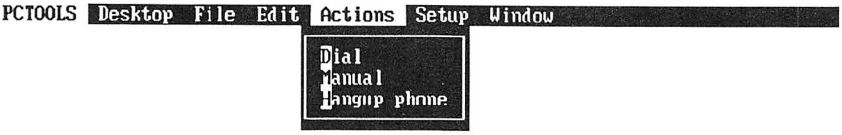
2. Enter the 1200 Baud or 2400 Baud modem string, or any other string which your modem may require, in the text box. The init strings for most 1200 and 2400 baud modems are provided in the dialog box for your convenience.

- If necessary, enter the "connect string" for your modem in the Connect string text box. Hayes compatible modems send the character string "Connect" to tell your telecommunications program that it has made a phone connection. If you have a non-Hayes compatible modem, you may need a different "connect string." Check your modem user's manual for the necessary string to enter in the text box.

3. Choose the Accept command button to change the modem setup.

Choosing Actions

Once you have determined your phone directory entries, established transmission parameters for each entry, you are ready to initiate communications. Use the commands on the Actions menu to dial the phone and initiate on-line communication.



Dialing Numbers

With PC Tools Desktop Telecommunications, you can dial a phone number yourself by typing in the numbers using the keyboard, or you can let the computer do it automatically.

If your modem has switches or options to allow "true carrier detection," which lets you know when the connection is made, use that setting for best performance with PC Tools Desktop Telecommunications; otherwise Telecommunications may not be able to properly determine when you are connected or have hung up the phone.

If a connection cannot be made, a message is displayed on the message bar indicating the reason. For example, the Hayes Smartmodem® displays "no carrier" if the connection cannot be made. See the manual that came with your modem for any messages your modem may display.

Dial

Make sure your Hayes compatible modem is connected and turned on before trying to dial a number.

Short cut

Type the number displayed to the left of the entry you want to dial and press Enter.

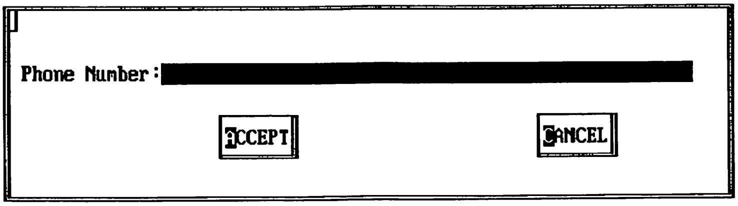
or

1. Select the entry you want to call.

2. Choose **Dial** from the Actions menu.
   or
   Press Enter to dial the phone number automatically.
   or
   Double-click on the entry.
   The terminal window appears with the cursor positioned in the upper left corner of the blank screen indicating you are on-line, and the horizontal menu bar displays pull-down menus for choosing actions on-line, receiving and sending files.

   Some modems will display a message showing you what number is being dialed and make dialing and ringing sounds.

Note: If the phone number of the selected entry is blank, the dialog box below appears to prompt for the phone number to dial.



Phone Number:

When the connection is made, the remote computer will send you questions or commands so you can send or receive files. You can type your responses, and your keystrokes will be transmitted to the remote computer. If you have included a script file, it will be executed after the connection is completed.

Note: If you need to send Esc to the other computer, press Shift - Esc because Esc sends you to the previous window.

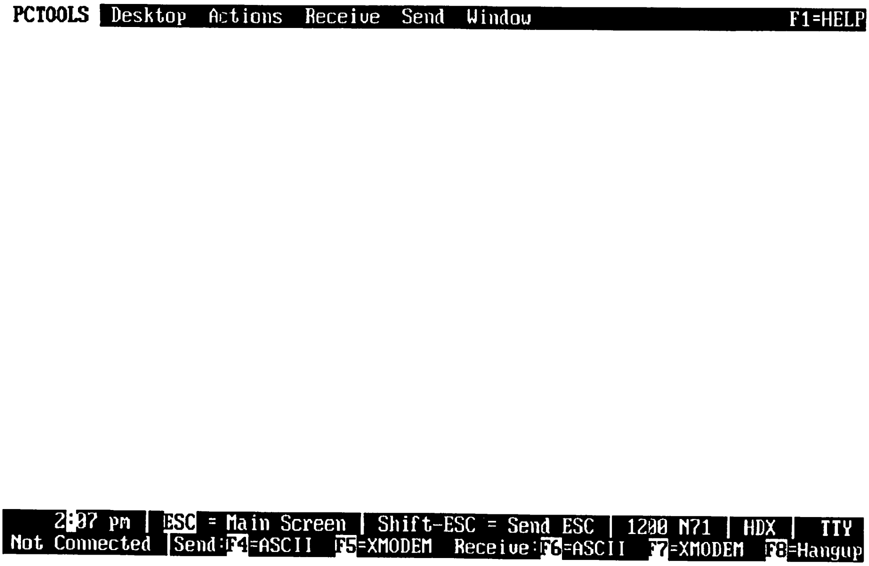
Manual

You can choose to dial the phone manually if you do not want to use the included entries, or if you want to use a different phone number without changing the parameters you've already selected. Another reason for dialing manually is if you don't have a Hayes compatible modem attached. If you are directly connected to another computer without using a modem, you should also use the manual dial.

1. Select an entry that has the transmissions parameters you want.
2. Choose **Manual** from the Actions menu.
   The on-line screen (following) appears with the cursor positioned in the upper left corner of the blank screen indicating you are on-line,

and the horizontal menu bar displays pull-down menus for choosing actions on-line, receiving and sending files.

The bottom line contains short cut keys as well as information about your current configuration. For example, the lower right-hand portion of the following screen shows 1200 (Baud rate), N (no parity) 7 (number of data bits), 1 (number of stop bits), HDX (half duplex), and TTY (teletype terminal emulation).



```
   2:07 pm | ESC = Main Screen | Shift-ESC = Send ESC | 1200 N71 | HDX |  TTY
Not Connected |Send:F4=ASCII  F5=XMODEM  Receive:F6=ASCII  F7=XMODEM  F8=Hangup
```

3. Type the appropriate dialing sequence described in your modem manual. If you are using a Hayes modem, for example, you type ATDT (AT gets the modem's attention; D is for dial, T is for tone) then the phone number.

Note: Some modems will display a message showing you what number is being dialed and make dialing and ringing sounds.

When the connection is made, the remote computer will send you questions or commands so you can send or receive files. You can type your responses, and your keystrokes will be transmitted to the remote computer.

Note: If you need to send Esc to the other computer, press Shift - Esc because Esc sends you to the previous window.

Hangup Phone

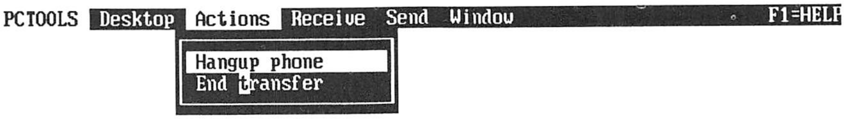
If you decide not to establish communications, you can hang up the phone from the Actions menu before ever going on-line.

- Choose **Hangup phone** to disconnect your modem.

Note: You can also hang up the phone while it is dialing by pressing any key to cancel.

Choosing Actions On-Line

The Actions menu below, which appears after communication with the remote computer has been established, contains the following commands:



Hangup Phone

To end a communications session and disconnect your modem from the phone line, you need to use the **Hangup phone** command. Be sure to log off the remote computer before issuing the hang up the phone command.

- Choose **Hangup** from the Actions menu.
  You will end the session and go back to the phone directory window.

End Transfer

You may decide you want to end the transfer (send or receive) of a particular file, but want to stay connected to the remote computer for receiving another file.

- Choose **End transfer** from the Actions menu.
  You remain connected to the remote computer, but the current file transfer ends. This command also ends script file processing.

Note: When using the ASCII protocol to receive files, you must use the end transfer command to inform Telecommunications of the end of the file transfer.

Receiving Files

With Telecommunications, you can receive, or download, files from a remote computer and save them to disk. Receiving files involves calling another computer and instructing the other system to send files. For example, you can download a program from a service like CompuServe or download spreadsheet data from your company's mainframe computer.

In order to receive files, you need to make sure to use the same protocol as the remote computer. A communications protocol is a set of rules, like an etiquette, that specifies how files are to be exchanged. From the Receive menu, you can choose either of the following protocols:

- ASCII
- XMODEM

ASCII

The ASCII protocol is generally used when you need to transfer text files between computers. You may also use ASCII receive to retain a record of anything which prints on your screen during a communications session. Such tasks as sending or receiving electronic mail or transferring text files to other computer systems are usually done with the ASCII protocol. When receiving (downloading) a file, you must prompt your computer by giving it the file name it is to receive.

ASCII is not an error-free protocol, which means this protocol does not check for errors caused by interference in the phone lines. Therefore, you should use XMODEM if it is critical that no errors are received in the document. The ASCII receive can also be used to create a log of all data received from the remote computer while you are connected.

1. Set up the remote computer for the ASCII file transfer.
   Select the phone directory entry you want to call, dial the number and establish connection. The remote computer will begin sending you questions or menus from which to choose commands. Answer the questions or type the commands.

   When you register with a computer service, you will receive a manual explaining the procedure used to set up with the service. In addition, most bulletin board systems have on-line help the first time you log on.

2. Choose **ASCII** from the Receive menu or press F6.
   The Save dialog box appears.
3. Type the name of the file to be received in the File name text box.
   Give the file a name and extension that's logical to you.
4. Select Save to capture the file and save it.
   As the file transfer takes place, the information in the file appears on the screen.
5. Choose **End Transfer** from the Actions menu when the transfer is complete.

You may cancel an ASCII transfer at any time by choosing the **End Transfer** command from the Actions menu or by pressing the Esc key.

XMODEM

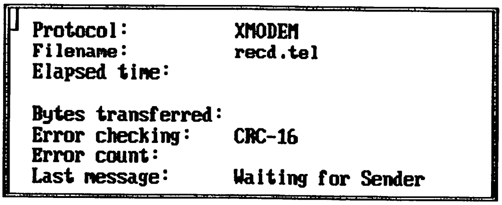
XMODEM is the most universal microcomputer protocol. It contains mechanisms to check for errors caused by interference in the transfer, like static in the phone lines. Although it is slower than ASCII, it is more accurate, so use XMODEM to capture applications files.

1. Set up the remote computer for an XMODEM download.
   Select the phone directory entry you want to call, dial the number and establish connection. The remote computer will begin sending you questions or menus from which to choose commands. Answer the questions or type the commands.

   When you register with a computer service, you will receive a manual explaining the procedure used to set up with the service. In addition, most bulletin board systems have on-line help the first time you log on.

2. Choose **XMODEM** from the Receive menu or press F7.
   The Save dialog box appears.
3. Type the name of the file in the File name text box.
   Give the file a name and extension that's logical to you.
4. Select **Save** to capture the file and save it.
   As the file transfer takes place, the Receive box below appears telling you how much time has elapsed, how many bytes have been transferred, and how many errors have occurred.

   You may cancel the transfer at any time by choosing the **End Transfer** command from the Actions menu, or by pressing the Esc key, or by clicking the close box.



```
Protocol:          XMODEM
Filename:          recd.tel
Elapsed time:

Bytes transferred:
Error checking:    CRC-16
Error count:
Last message:      Waiting for Sender
```

The information in the Receive box is explained below:

Protocol: shows that XMODEM protocol is being used for the file transfer.

File name: shows the name you've typed in the File name text box.

Elapsed time: shows how many minutes and seconds have elapsed while the file is transferred.

Bytes transferred: shows how many characters have been transferred so far.

Error checking: shows the method of checking for errors the program performs. Since noise and static can cause problems when transferring files over telephone lines, Telecommunications performs two kinds of error checking: Checksum and CRC. The program automatically chooses which method is being used by the remote computer.

Error count: shows the number of errors transmitted in a block of data. If you notice a large number of errors during a file transfer, you could cancel the transfer and call back to try again. You may have a noisy phone line, and 10 errors on one block causes XMODEM to terminate early.

Last message: provides messages during the file transfer.

Sending Files

With Telecommunications, you can send files to a remote computer. For example, you can upload a personal sales report from your PC to the mainframe computer at your company's headquarters. In order to send files from your computer, you need to make sure to use the same protocol as the remote computer. From the Send menu, you can choose either of the following protocols:

- ASCII
- XMODEM

ASCII

Use ASCII to send text files to a system that doesn't support any other protocol. ASCII is not an error-free protocol, which means this protocol does not check for errors caused by interference in the phone lines, so static, for example, displays nonsensical characters on your screen. If you want to send large files or application programs like spreadsheets or databases, you should use XMODEM.

1. Set up the remote computer for an ASCII upload.
   Select the phone directory entry you want to call, dial the number and establish connection. The remote computer will begin sending you questions or menus from which to choose commands. Answer the questions or type the commands.

   When you register with a computer service, you will receive a manual explaining the procedure used to set up with the service. In addition, most bulletin board systems have on-line help the first time you log on.

2. Choose ASCII from the Send menu or press F4.
   The File Load dialog box appears. See the Getting Started section for how to use the File Load dialog box.
3. Select the file you want to send from the list box.
4. Select Load to send the file.
   The file's contents appear on the screen as the file is transferred.

Note: You may also have to tell the remote computer that the transfer is complete by pressing Shift - Esc.

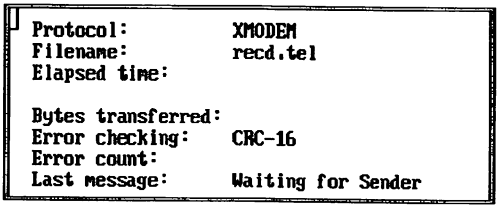
XMODEM

The XMODEM method of file transfer allows dissimilar computer systems to exchange files. Call the computer system to which you are transferring files and instruct the other system to receive the file.

1. Set up the remote computer for an XMODEM upload.
   Select the phone directory entry you want to call, dial the number and establish connection. The remote computer will begin sending you questions or menus from which to choose commands. Answer the questions or type the commands.

When you register with a computer service, you will receive a manual explaining the procedure used to set up with the service. In addition, most bulletin board systems have on-line help the first time you log on.

2. Choose **XMODEM** from the Send menu or press F5.
   The File Load dialog box appears. See the Getting Started section for how to use the File Load dialog box.
3. Select the file you want to send from the list box.
4. Select **Load** to send the file.
   The Send box below appears telling you how much time has elapsed, how many bytes have been transferred, and how many errors have occurred.



```
Protocol:          XMODEM
Filename:          recd.tel
Elapsed time:

Bytes transferred:
Error checking:    CRC-16
Error count:
Last message:      Waiting for Sender
```

The information in the Send box is explained below:

Protocol: shows which protocol is being used for the file transfer, in this case, XMODEM.

File name: shows the name of the file you've selected from the File Load dialog box.

Elapsed time: shows how many minutes and seconds have elapsed while the file is transferred.

Bytes transferred: shows how many characters have been transferred.

Error checking: shows the method of checking for errors being used by the remote computer.

Error count: shows the number of errors transmitted in a block of data. If you notice a large number of errors during a file transfer, you may want to cancel the transfer by choosing **End transfer** from the Actions menu. Ten errors on a signal block will automatically end the transfer. This may indicate a noisy phone line, and you may want to try again after hanging up and redialing.

Last message: provides messages during the file transfer.

Automating Communications

In using telecommunications services, you will often find yourself entering the same information session after session. For example, when you connect your PC to larger computers, you generally go through an identical log in procedure to identify yourself to the other computer.

To automate such tasks, Telecommunications provides you with a simple programming language that creates communications scripts that your PC carries out. Using the script feature, you can program your PC to automatically log in, check your mail, and issue any other commands you want to perform at the start of each session. Whenever you choose an entry and a connection is established, the script that is associated with it runs.

This section shows you the commands used for writing script files and how to use script files in PC Tools Desktop Telecommunications. The Appointment Scheduler chapter also explains how you can set an alarm to run a macro for automating communications.

Writing Script Files

Since Telecommunication scripts are text files, you can create them using a word processor, such as Notepads. PC Tools Desktop supplies you with script files with the .SCR extension, but you can create and save your own using Notepads.

The following commands are used for writing your own script files to perform actions after you are connected with the other computer. Commands can be written in upper or lower case letters.

RECEIVE variable

> The RECEIVE command captures a character string sent from the remote computer and stores it in a variable for use later in your script. The character string can be up to 80 characters long and is ended at the first return or line feed received. If nothing is received within 10 seconds, the variable is set to null.
>
> You can designate up to three different character strings to be placed into the variables the script function uses: v1, v2, or v3. For example, if you placed RECEIVE v1 at the start of your script, the

initial prompt issued by the remote computer is saved in a variable name v1. You could then use this variable later in your script.

SEND variable or "string"

The SEND command enables you to send a message to the remote computer. You can send either variables (v1, v2, or v3) or character strings, and the message is followed by a carriage return to indicate the end of the message. For example, if you placed your password in a variable named v2, the script would send it when the remote computer prompts for it. Or you could type your password ("secret") at the SEND command.

Character strings must be enclosed in quotation marks ("password"), and can include the ^ character to indicate a control character. For example, ^C sends Ctrl C. To produce a quote within a string, you need to type ^".

You can optionally follow the SEND command with a semicolon (;) to indicate that you do not want to send a Return character at the end of the line.

As an example, the menu on a local bulletin board system may use single letter commands for choosing operations (such as "D" for downloading files) and may not require that you press Enter after the command letter. The following scripts shows you how to send the D command without also sending the Return character:

```
WAITFOR "Enter choice (ABCDE)"
SEND "D";
```

WAITFOR "string"

The WAITFOR command halts execution of the script until the specified string is issued by the remote computer. The WAITFOR command ignores case (upper or lower) of the data received.

INPUT variable

The INPUT command stores up to 80 characters from the keyboard ending with a return or line feed, and places them in the v1, v2 or v3 variable.

PRINT variable or "string"

The PRINT command displays the value of the specified variable or the character string on the screen.

You can optionally follow the PRINT command with a semicolon (;) to indicate that you do not want to send a Return character at the end of the line.

The next example shows a script that enables you to type a file name (which is in v1) from the keyboard and then displays "Now sending file name to the office".

```
PRINT  "Enter filename";
INPUT  v1
PRINT  "Now sending ";
PRINT  v1;
PRINT  " to the office"
```

The screen appears as follows:

```
Enter filename?  C:\MYFILE
Now sending C:\MYFILE to the office
```

:label

The :label command marks a particular place in a script file for future reference and is used with the GOTO or IF statements so you can easily move from place to place in your script file. Only the first 8 characters of a label are used.

GOTO label

The GOTO command enables you to change the flow of your script to another line starting with ":label."

IF variable [= | <> | CONTAINS] string GOTO label

The IF command is a decision making command which changes the flow of your script and goes to the line starting with :label if the variable either equals or doesn't equal the string or if the string in contained within the variable. For example, if your script contains the following statement

```
IF v1 contains "download" GOTO download
```

when the computer detects "download" anywhere within variable 1, it looks for the label "download" and continues.

* any comment

The * is used to mark a message that the computer won't recognize as a command. Use * messages to remind you what the script file is doing.

DOWNLOAD protocol "file name"

or

DOWNLOAD protocol variable

This command tells Telecommunications to receive a file from the remote system. The protocol can be ASCII or XMODEM. If the specified file already exists, it will be deleted before receiving the new file.

Note: Before you use this command in a script, the script must contain commands to tell the remote system to Download a file using the same protocol as the DOWNLOAD command, and the remote system must be ready to send the file.

The following example script will receive the file

"C:\BUDGET\MONTH.END" using the XMODEM protocol:

```
DOWNLOAD XMODEM "C:\BUDGET\MONTH.END"
```

The following example script will receive the file whose name has been stored in the variable "V1" using the XMODEM protocol:

```
DOWNLOAD XMODEM V1
```

For example, after responding to the prompts to do an ASCII download, a single Return often tells the remote system to begin transferring. If the remote system always displays the message "***TRANSFER COMPLETE***" upon completion, you can use the following script segment to receive the file:

```
DOWNLOAD ASCII "C\MYFILE" *name to be received
SEND "^M";                *Return to start transfer
WAITFOR "*** TRANSFER"    *string when done
```

UPLOAD protocol "filename"

or

UPLOAD protocol variable

This command tells Telecommunications to begin sending a file to the remote system. If the specified file does not exist, the script cancels the upload operation but continues with the script. The protocol may be either XMODEM or ASCII.

Note: Before you use this command in a script, the script must contain commands to tell the remote system to upload a file using the same protocol as the UPLOAD command, and the remote system must be ready to receive the file.

The following example script will send the file

"C:\MEMOS\TODAYS.NWS" using the XMODEM protocol:

```
UPLOAD XMODEM "C:\MEMOS\TODAYS.NWS"
```

The following example will send the file whose name has been stored in the variable "V2" using the ASCII protocol:

```
UPLOAD ASCII V2
```

HANGUP

This command hangs up the phone, or disconnects the file transfer, if you are doing an unattended file transfer, so that you won't have to worry about accumulating a large telephone charge.

PAUSE

or

PAUSE number

This command pauses execution of a script for a specified number of seconds. Using PAUSE without a specified number pauses for one second.

The following example script prints a message on the screen and pauses five seconds for you to read it:

```
PRINT        "You are now connected. . . "
PAUSE 5
```

The following commands can be used to help you find errors in script files and should be removed from the script after you have written and tested it.

ECHO

The ECHO command alternately displays and turns off the display of characters received during a WAITFOR command. The first ECHO command in the script causes all subsequent WAITFOR commands to display characters received while waiting for the desired string. This can help if you are testing a new script or trying to determine why an existing script is not working properly. Used with TRON and TROFF, you can usually determine why a script does not work as expected.

TRON

The TRON command (Trace On) displays the commands in your script file on the Message bar at the bottom of your screen. When the command is displayed, the script pauses until you press the Spacebar to execute the command. Pressing Esc cancels any further execution of the script.

TROFF

The TROFF command (Trace Off) executes the script command without pausing or displaying the scripts on the Message bar. In effect, it turns off the TRON command. Using TRON and TROFF together enables you to trace through portions of a script that is giving you problems.

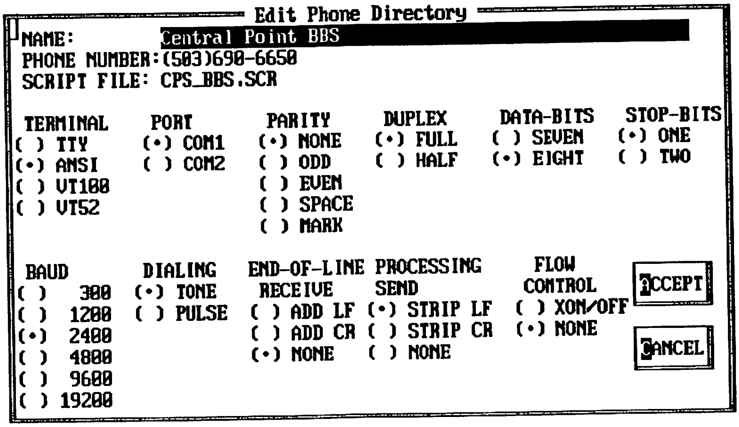
To Use a Script File:

If you want to write your own script, you need to use either the Notepads application or another word processor, then save the file as you normally would. In Notepads, you can save files as ASCII or PC Tools Desktop format. You need to have your script files in the same subdirectory you have your Desktop program or Desktop will not be able to find and run the script. If you receive the message "unable to open file" when trying to run a script, just move or copy the script file into the subdirectory.

We have supplied you with script files for automating some standard procedures, but you will need to add your own password to the files. The files are saved with the .SCR extension.

This procedure shows you how to use a script file once it has been written and saved. In the Telecommunications window, perform the following task:

1. Select the phone directory entry you want to add a script file to.
2. Choose Edit entry from the Edit menu.
   The Edit Phone Directory dialog box appears so you can add the name of the script file.



```
NAME:           Central Point BBS
PHONE NUMBER:(503)690-6650
SCRIPT FILE: CPS_BBS.SCR

TERMINAL     PORT       PARITY     DUPLEX     DATA-BITS   STOP-BITS
( ) TTY      (•) COM1   (•) NONE   (•) FULL   ( ) SEVEN   (•) ONE
(•) ANSI     ( ) COM2   ( ) ODD    ( ) HALF   (•) EIGHT   ( ) TWO
( ) VT100               ( ) EVEN
( ) VT52                ( ) SPACE
                        ( ) MARK

BAUD         DIALING    END-OF-LINE PROCESSING   FLOW
( )   300    (•) TONE    RECEIVE     SEND        CONTROL
( )  1200    ( ) PULSE  ( ) ADD LF (•) STRIP LF  ( ) XON/OFF
(•)  2400               ( ) ADD CR ( ) STRIP CR  (•) NONE
( )  4800               (•) NONE   ( ) NONE
( )  9600
( ) 19200
```

3. Select the Script file text box.
   The cursor is positioned in the text box for you to type the file name and extension of the script file you want to run.
4. Select **OK** once you have verified that all the other options are correctly selected.
   The application window appears with the name of the script file added to the entry.

To run the script, dial the phone and make the connection.

Using Background Communications

PC Tools Desktop can perform computer communications while you are in an application program, such as dBase or Lotus 1-2-3. This means the communication takes place in the background without your involvement. You can set up your computer to send or receive a file, then load your application program and work while the file transfer takes place. The communication is unattended and requires no keyboard control.

You need to have installed the PC Tools Desktop background telecommunications option before attempting any background file transfers. This is a file called BACKTALK.EXE that must be in your AUTOEXEC.BAT file prior to loading PC Tools Desktop. If you installed PC Tools Desktop using the PC Setup program, and you selected background communications at that time, this has already been done for you. If not, you can add BACKTALK.EXE to your AUTOEXEC.BAT file using Notepads or any other editor. BACKTALK.EXE takes approximately 64K of resident memory.

When you install PC Tools Desktop using the background communications options, you need to designate only one communications port (COM 1 - COM 4) as the port you will use for background communications. If you use PC Setup to install BACKTALK, the setting will be added to your AUTOEXEC.BAT file based upon your responses.

To change your setup manually, you may edit the BACKTALK command in your AUTOEXEC.BAT file. For example, if you want to use COM 2, put the following in your AUTOEXEC.BAT file:

```
BACKTALK /2
```

No matter which COM port you have selected for background communications, you may use the other COM ports in foreground mode.

Note: Do not load or run any program in the foreground which uses the same serial port (COM 1, COM 2, etc) as is being used in the background or background communications may be interrupted.

TRANSFER.LOG file: Computer communications are not always completely reliable. For example, static on the phone lines can create communications errors. When you are using background communications, you will not be able to see if any transmission errors are occurring. To overcome this, Telecommunications creates a TRANSFER.LOG file which is automatically created whenever you use background communications with the XMODEM protocol to tell you whether you have successfully completed a file transfer.

The first line of TRANSFER.LOG will have the name of the file you sent or received, and the last line will say "completed" if the transfer was successful. If the transfer was not completed successfully, the last line will have a message such as "Time Out," "Too many retries," or "CRC error."

TRANSFER.LOG is created every time you use background communications with XMODEM, so if you delete it after each time, it doesn't matter. You can view the contents of TRANSFER.LOG in Notepads.

To Transfer Files in the Background:

1. Start the file transfer.
2. Press Alt - B to enter background mode.

After pressing Alt - B, you will return to the main Desktop menu or your underlying Desktop application. You may continue to work in Desktop or hotkey out to DOS and run other programs while the transfer continues unattended. When the transfer is complete, your PC will beep to alert you. Until this time, if you try to enter Telecommunications again, you will be warned that it is busy transmitting a file.

Background indicator: Whenever you are using background communications, a blinking "B" in the upper right hand corner of your screen will indicate that a background file transfer is taking place.

When using script files, it is necessary to stay in the telecommunications application until the script file has completed, regardless of whether or not background communications is installed.

If, however, background communications is installed and if script files are used to establish a connection (such as logging on to a bulletin board), and *then* a file transfer is initiated with the keyboard or mouse, you can use other PC Tools Desktop applications or exit from PC Tools Desktop and the file transfer will continue.

Sample Scripts

A sample script used to log on an imaginary system is shown below:

```
*my user id is 1234567890 and my password is secret
    WAITFOR "User id?"
    SEND "1234567890"
    WAITFOR "password?"
    SEND "secret"
    PRINT "You are ready to go"
```

Below is a sample script to log on to a bulletin board system and receive a file:

```
* LOG ON TO THE BBS
        SEND ""
        WAITFOR "User Id:"
        SEND "123456"
        WAITFOR "Password:"
        SEND "SECRET"
*
* Wait for the first menu which looks like:
*   (M) Mail (F) Files (G) Goodbye
*   Enter choice?
*
        WAITFOR "Enter choice?"
*
* Send "F" for the files menu
*
        SEND "F"
*
* Wait for the files menu which looks like this:
*   (L) List (D) Download (U) Upload (Q) Quit
*   Enter choice?
*
        WAITFOR "Enter choice?"
*
* Send "D" for Download to receive a file
*
        SEND "D"
*
* Wait for the prompt for the file name
*
        WAITFOR "Filename?"
*
* Send the name of the file to be downloaded
*
        SEND "TODAYS.NWS"
*
* Wait for the protocol menu which looks like:
*   (A) Ascii (X) Xmodem (Y) Ymodem  Enter Choice?
*
        WAITFOR "Enter choice?"
*
* Send our choice "X" for XMODEM
*
        SEND "X"
*
* Wait for message to begin
*
```

```
*
        WAITFOR "Begin XMODEM Transfer"
*
* Start our transfer specifying the name for our copy of the file
*
    DOWNLOAD XMODEM "C:\MYFILES\TODAYS.NWS"
*
* Send a return so we are back at the files menu
*
        SEND ""
*
* Choose Quit and Goodbye to log off the system
*
        WAITFOR "Enter choice?"
        SEND "Q"
        WAITFOR "Enter choice?"
        SEND "G"
        HANGUP
*
**** and we are all done
```

Macro Editor

The PC Tools Desktop Macro Editor is a keyboard utility which lets you store and recall frequently used text, keystrokes, commands and instructions. With keyboard macros, you can speed up your work by reducing the number of keystrokes required to perform complex or repetitive tasks. The Macro Editor allows you to assign a sequence of keystrokes (which could be commands or data) to one key or a key combination.

Macros can also be used with the Desktop Appointment Scheduler to automate tasks while you are away (see the Appointment Scheduler chapter for more information on scheduling macros). PC Tools Desktop is shipped with a file containing sample macros that are ready to run. You can try the examples that are explained in the Appointment Scheduler chapter and see how easy it is to use macros to simplify your work.

PC Tools Desktop is also shipped with macros for printing with the IBM Proprinter, Hewlett-Packard Laserjet, Epson FX-80, and any Panasonic printers.

You can redefine almost any key to perform one or more commands. For example, if you use a particular character string frequently in a document, you can create a macro which, when you press a specified key or key combination, "plays back" that character string. You can also create macros that automatically play back to start an application. Or if you want to print a file with special print features, you can insert macro names that send commands to the printer.

Macros are easy to play back. When you enter a macro key combination (which you assign), each keystroke, command, and instruction is carried out, starting at the cursor's current location. After a macro has run, you can continue working in the application as you normally do.

Since you can choose whether or not to run PC Tools Desktop memory resident, macro playback is affected. If PC Tools Desktop is not resident, macros will only playback in PC Tools Desktop. To play back macros everywhere, you have to run PC Tools Desktop as a memory resident program.

Use the Macro Editor to perform any of the following tasks:

- Print text files with custom features
- Override other keyboard functions

- Quickly start PC Tools Desktop using a macro definition
- Start other applications
- Insert the date and time into files
- Add delays to start an application at a later time

The Macro Editor is generally compatible with ProKey™ versions 4.0 and higher. You can load existing ProKey macro files directly into the Macro Editor, but there are a few exceptions.

- Some keys that are supported by ProKey are not supported by the Macro Editor. See the end of the chapter for a complete list of valid keys and key combinations.

- The Macro Editor does not support redefinition of the entire keyboard since it only recognizes the standard IBM BIOS scan codes.

- Also, the Macro Editor does not include support for guarding macros or unique macro names.

IMPORTANT: Applications included in PC Tools Utilities, such as Compress and PC Secure, which can be executed with optional parameters at the DOS command line, can be used with macros, and macros can be used to activate any application. However, macros cannot be used to select commands from the pull-down menus in PC Tools Utilities' PC Shell, PC Secure, Compress and PC Backup. In some cases, these applications require you to confirm commands that will modify a file or disk as the result of keystroke input. Therefore these applications do not buffer keystrokes that would cause you to inadvertently bypass a confirmation process. Since keystrokes are not buffered in these applications, macros will not work.

Note: This chapter assumes you already know how to use the commands on the Notepads Edit menu and the Search menu (the commands are the same in the Macro Editor). If you don't already know how to use the Notepads editing functions, turn to the Notepads chapter and see the Editing text and Searching in Notepads sections.

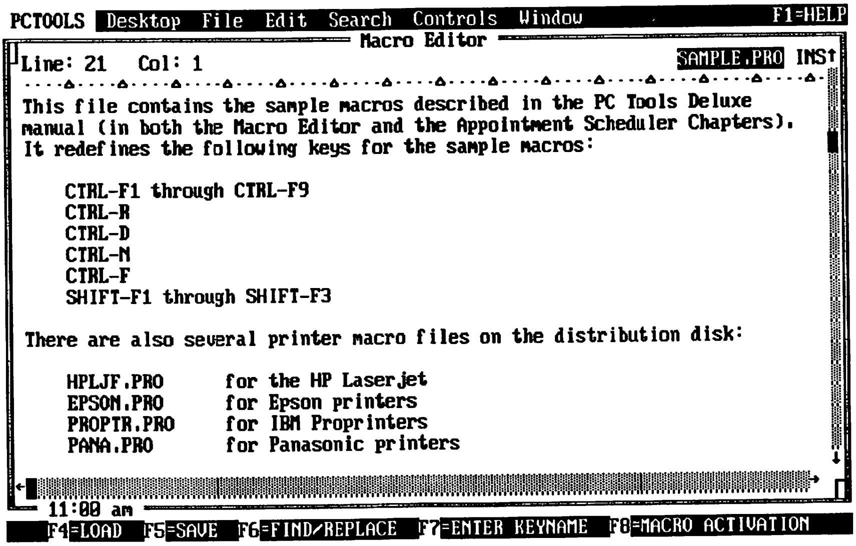
Opening the Macro Editor

You can view and edit the contents of a macro file by choosing **Macro Editor** from the Desktop pull-down menu. Macros are created in a Notepad window and stored as text files with an assigned file name. All editing keys and text editing features used in Notepads are available in the Macro Editor. You should be familiar with using Notepads before using the Macro Editor.

Once the Macro Editor is chosen from the Desktop pull-down menu, the File Load dialog box appears. See the "Getting Started" chapter for how to use the File Load dialog box.

After a Macro Editor file has been loaded or created, the Macro Editor window is displayed.

Note: You can display as many as 15 Macro Editor files simultaneously by choosing Macro Editor again from the Desktop pull-down menu.



```
Line: 21   Col: 1                                            SAMPLE.PRO INS

This file contains the sample macros described in the PC Tools Deluxe
manual (in both the Macro Editor and the Appointment Scheduler Chapters).
It redefines the following keys for the sample macros:

    CTRL-F1 through CTRL-F9
    CTRL-R
    CTRL-D
    CTRL-N
    CTRL-F
    SHIFT-F1 through SHIFT-F3

There are also several printer macro files on the distribution disk:

    HPLJF.PRO       for the HP Laserjet
    EPSON.PRO       for Epson printers
    PROPTR.PRO      for IBM Proprinters
    PANA.PRO        for Panasonic printers
```

From top to bottom, the Macro Editor screen contains the following parts:

- **Macro Editor Horizontal Menu bar:** contains the names of pull-down menus and on-line Help for quick answers and guidelines.
- **Window border:** indicates the active window with a double border. The inactive window has a single border. The active window also shows the time on the lower left corner of the window's border.
- **Macro Editor window:** contains the text of the file you're working with.
- **Close box:** used with the mouse to close a window.
- **Status line:** shows what line and column the cursor is on, the file name, and whether you are in insert or overtype mode. When INS does not appear in the upper-right corner of the window, you are in overtype mode.

- **Tab ruler:** sets and changes tab stops if the Tab Ruler display is on.

- **Selection bar:** blank space in the first column used with the mouse to select a line of text.

- **Scroll bars:** used with the mouse to move, or "scroll" through the file.

- **Resize box:** used with the mouse to resize the window.

- **Message bar:** contains messages to guide you through your work. When you open the Macro Editor, the short cut keys are displayed. You can select any of these commands by pressing the highlighted function key or positioning the mouse cursor on any portion of the command or highlighted key and clicking the mouse. For example, to save your document just press F5 or click anyplace on "F5=SAVE" with the mouse; this brings up the Save dialog box.

Creating Macros

You can create macros in the file displayed in the Macro Editor window. The following illustration shows you what a macro looks like in a macro file. It consists of four main parts: a beginning, a keystroke, a script, and an end. The script is a recorded sequence of characters and commands. The keystroke is the key or key combination that you press to "play" the script.

```
<begdef><ctrlc>macro editor<enddef>
```

beginning keystroke script end

This example shows that the keystroke Ctrl and C has been assigned the script "macro editor." If the macro is active while you are working in an application, pressing Ctrl and C at the same time displays the words "macro editor" on your screen.

When creating a macro, you need to remember a few simple rules:

- Macros must begin with the label <begdef> and end with <enddef>.

- Macro keystrokes, the names of special keys, and the <begdef> and <enddef> labels must be contained within angular brackets. Special keys include function key names, control keys, cursor keys, etc. The keys are listed at the end of this chapter.

Note: Opening a macro file does not carry out the macro commands and instructions. To carry out the commands you need to exit the Macro Editor and play back the macro elsewhere. How to play back a macro is explained later in this chapter.

Creating macros involves four steps:

- Writing a macro
- Describing a macro
- Activating a macro
- Testing a macro

To Write a Macro:

Writing macros requires some thought before you begin. You need to decide what you want the macro to do and remember the rules for creating macros.

Note: To enter the Alt key, first press F7, then Alt.

1. Press Alt and the + key at the top of your keyboard to mark the beginning of your macro.
   <begdef> is automatically displayed.

   Note: The <begdef> label must start in the first column, but tabs and carriage returns are ignored after the <begdef> label so you can read your macros easier.

2. Press the keystrokes you want to use.
   All macro keystrokes must be contained within left and right angular brackets "< >." Enter names of any keys normally used for editing (for example, backspace, Up, Enter, etc.) by pressing F7 then the specified key. (See Note below.)
3. Type in the script you want.
4. Press Alt and the - key at the top of your keyboard to mark the end of the macro, then press Enter.
   <enddef> is automatically displayed.

An example macro is shown below:

```
<begdef><ctrlp>Central Point<enddef>
```

The Ctrl and P key combination is redefined to display the name Central Point.

IMPORTANT: Certain keys require pressing F7 prior to using them in a macro. F7 means "insert the next key" rather than performing its Desktop function. For example, in Desktop, most of the function keys are already defined. In addition, several of the Alt keys are used in the pull-down menus. If you want to define a macro that uses a function key, Alt key, or most editing keys (for example, the arrow keys, Ins, Del, Backspace, etc.), you need to type F7 immediately before the key you want entered into the macro. For example, F1 is reserved for Help in Desktop. If you want to create a macro to be used with some other program that uses F1, you would press F7 then F1 to insert the F1 key into your macro definition. Pressing the Shift or Alt key along with the function keys will not require you to press F7 first, however, as these are not used by Desktop.

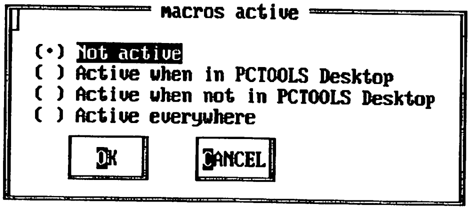
To Describe a Macro:

Give the macro a descriptive name to help you remember what it does. It is also a good idea to attach a comment to each of your macro definitions, especially as they get more complex. You can add any kind of comment by typing the desired information before starting the macro definition. The PC Tools Desktop Macro Editor won't play back anything that is not contained between the <begdef> and <enddef> labels.

Macro Activation

You can specify whether or not macros will play back when you are using only PC Tools Desktop; when you are using another application or at the DOS prompt; or when in PC Tools Desktop, as well as any other application and the DOS prompt. When saving a macro file, the system updates any edited macros that were previously made active, so you won't have to reactivate them. All files defined as active are saved in a special memory buffer, ready to play back the macro definition when you press the designated key sequence.

1. Choose **Macro activation** from the File menu or press F8.
   The macros active dialog box appears.



macros active

(•) Not active
( ) Active when in PCTOOLS Desktop
( ) Active when not in PCTOOLS Desktop
( ) Active everywhere

2. Select any one of the following options:

   Not active: specifies that no macros in the current file will play back (be active).

Active when in PC Tools Desktop: specifies that the macros contained in the current file will play back only when you are using a PC Tools Desktop application. This option is useful for printer macro files. Note that macros will not play back inside the Macro Editor.

Active when not in PC Tools Desktop: specifies that the macros contained in the current file will play back anywhere you are working, except in PC Tools Desktop. This option is useful if you have macros defined to play back one way in PC Tools Desktop Notepads, for example, and another way in another word processor.

Active everywhere: specifies that macros will play back everywhere on your system: PC Tools Desktop applications, other applications on your system, and at the DOS prompt.

3. Select **OK** to activate the macro definitions in the current file.
   The dialog box closes and your file is saved.

To Test the Macro:

After creating your macro, you'll want to test it to make sure it performs correctly by running it and confirming its results. You can test a macro from an application or the DOS prompt, depending on the purpose of the macro.

1. Exit the Macro Editor after activating your macros.
2. Place the cursor where you want to execute the macro.
3. Press the keystrokes you defined.
   The assigned macro is played back.

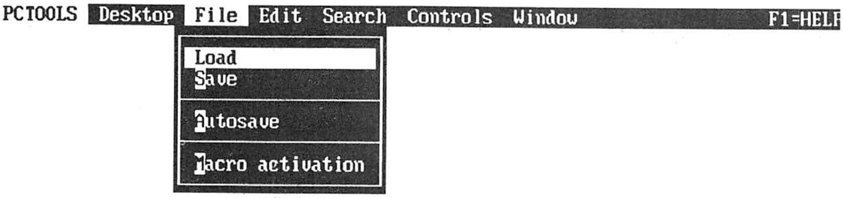
To Cancel the Macro:

When you are testing a macro, you may notice that it is not doing what you intended. You can easily cancel the macro while it is running and then go back to the Macro Editor to make any changes to the macro.

- Press Esc to terminate a running macro.

Working with Files

The File pull-down menu below provides a list of commands for working with your Macro Editor files.



Load

- Choose **Load** from the File menu or press F4.
  The File Load dialog box appears containing the names of the existing files, drives and directories. For information about using the File Load dialog box, see Using the File Load dialog box in the "Getting Started" chapter.

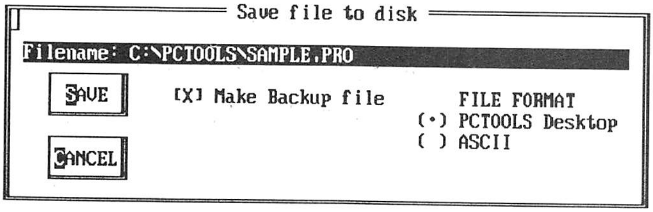
Note: When you load a file into the Macro Editor window using the **Load** command, any Macro Editor files currently open are discarded and replaced by the file you are loading. Any changes made to the current file are lost when you load another file, so be sure to save changes to your current file before opening another one. Or you can open another macro window and have both.

Save

Macro Editor files are automatically saved when you close the Macro Editor window by pressing Esc or clicking in the close box. In addition, you can save a file using the **Save** and **Autosave** commands from the File menu.

When you save a file, all changes made to the file are saved in the format you select, but to use a macro file, it should be saved in PC Tools Desktop format. In addition, any macro activation option is saved with your file.

1. Choose **Save** from the File menu or press F5.
   The **Save** dialog box appears with the name of the current file in the Filename text box.


Save file to disk

Filename: C:\PCTOOLS\SAMPLE.PRO

[X] Make Backup file

FILE FORMAT
(•) PCTOOLS Desktop
( ) ASCII

Note: If you want to save the file under a different name, just enter a new name in the text box.

2. Select any of the following **Save** options:

   PC Tools Desktop: saves your Macro Editor file in PC Tools Desktop format, preserving all window colors and sizes. PC Tools Desktop is the default file format.

   ASCII: saves your Macro Editor file as a straight text file. This option provides maximum interchangeability with other word processors, but does not save formatting information. If you load an existing ASCII file, it will be saved as ASCII unless you change the option.

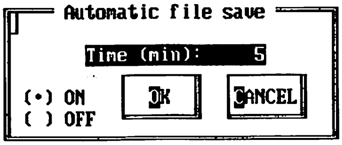
   Make Backup file: in addition to saving the file to the specified file name and file format, this option creates a backup file for your Macro Editor file and gives it the .BAK extension. The default backup option is ON. If you do not want to create a backup file, select this option to turn it off.

3. Select the **Save** command button to save your file with the options you've selected.
   The dialog box closes.

Autosave

You can have the Macro Editor save your file automatically at specified intervals. The **Autosave** command saves a file just like the **Save** command, but at a specific time interval that you set. It is recommended that you use this command to minimize any data loss from power outages.

1. Choose **Autosave** from the File menu.
   The Automatic file save dialog box appears.



Automatic file save

Time (min): 5

(•) ON
( ) OFF

2. Type a number representing the number of minutes between each automatic save. The default setting saves every 5 minutes.
3. Select either one of the automatic save option buttons:

On: turns on the automatic save for the number value you've set. The default setting is ON.

Off: turns off the automatic save.

4. Select **OK** to set the automatic save.
   At the specified interval your file is saved if you turned Autosave ON.

Editing Text

When you want to create a new Macro file or make changes to an existing file, you need to perform basic word processing tasks. From the Macro Editor's Edit menu, you can do any of the following:

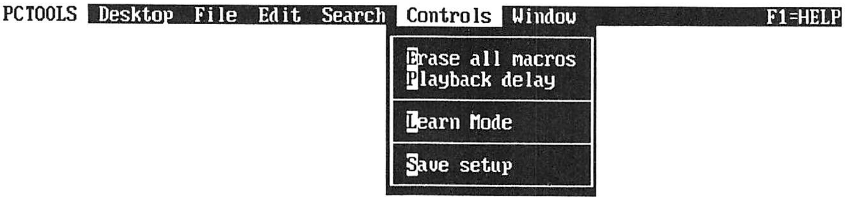
- Cutting, Copying and Pasting
- Deleting all text
- Inserting files
- Moving to a specific line

You can also use commands on the Search menu to find, change, or replace specified text.

These operations are explained in the Notepads chapter.

Setting Controls

The Controls menu commands (shown below) enable you to change controls for macros.



Erase All Macros

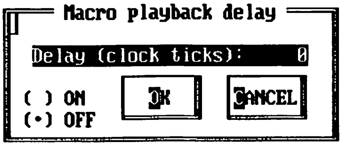
Once you select any of the active options from the Macro activation dialog box, PC Tools Desktop encodes and stores the macro for playback in a special memory buffer. You can erase all macros if you don't like what you've created so far, or the results of running the macro are unsatisfactory. Erasing all macros amounts to purging the memory buffer, but does not affect the file stored to disk or displayed in the current window.

- Choose **Erase all macros** from the Controls menu.
  This command does not affect the file stored on disk or displayed in the window. It simply deactivates any active macros.

Playback Delay

You can control how fast a macro plays back in an application. When using multiple keystrokes in a macro, part of the macro may be ignored or your computer may beep during playback. If this happens, it is because the contents of the macro are being sent to the application too fast for it to process.

1. Choose **Playback delay** from the Controls menu.
   The Macro Playback delay dialog box is displayed.



Macro playback delay

Delay (clock ticks): 0

( ) ON
(•) OFF

2. Type the number representing the amount of time you want the playback delayed.
   Values are measured in eighteenths (1/18) of a second. This number is the number of additional 1/18-second time periods to insert between each character played in the macro. A value of zero will send a character every 1/18 second.
3. Select either one of the playback delay option buttons:

   On: turns on the playback delay option, causing macros to delay playback for the amount of time you've set.

   Off: turns off the macro playback delay option. The default setting is OFF.

4. Select **OK** to turn the playback delay on or off.

Learn Mode

This command allows you to create macros by recording keystrokes. The default setting is OFF. When you turn Learn Mode ON, a checkmark appears to the left of the command name on the Controls pull-down menu.

- Choose **Learn Mode** from the Controls menu to change the setting.

To Create a Macro Using Learn Mode:

Note: PC Tools Desktop has to be running as a memory-resident program to use this feature.

Learn Mode is another way to create macros. Instead of typing in each key manually, you can request that the Macro Editor remember the keys you press in your applications and save them for you in a macro.

All macros created with Learn Mode are copied into the macro memory buffer and saved. The next time you bring up PC Tools Desktop, a temporary file (LEARN.PRO) is automatically created and contains the macros created with Learn Mode.

1. Choose **Learn Mode** from the Controls menu to switch it ON.
2. Hotkey out of PC Tools Desktop and bring up the application you want to create the macros for.
3. Press Alt and the + key at the top of your keyboard.
   The cursor shape changes to a block to indicate you are in Learn Mode. (If your particular application already uses a block-shaped cursor, you won't notice a difference.)
4. Press the keystroke combination for this macro.
   As an example, type Ctrl and F.
5. Create the macro script by entering the keystrokes and commands you want to record.
   In Learn Mode, every keystroke, even if you press the backspace key to correct a mistake, is created as part of the macro. So check any recorded macro for errors or extra keystrokes.
6. Press Alt and the - key at the top of the keyboard to end the macro.
   The cursor shape changes back to the blinking line (or whatever cursor shape your application uses) to indicate you are no longer creating macros in Learn Mode.

Note: You are still in Learn Mode until you go back to the Macro Editor to turn it off.

Learn Mode: When you create macros in Learn Mode, the macros are saved in a special memory buffer until you run PC Tools Desktop again. When you re-enter PC Tools Desktop, the Learn Mode macros are copied into a special file, automatically created for this purpose, called LEARN.PRO.

You can have macros for all of your favorite applications. For instance, you can have macros for your word processor, your spreadsheet, your database, whatever applications you use frequently. With the Learn Mode macros saved to the special LEARN.PRO file, you can use the Clipboard to copy and paste the macros into separate files for each of your applications, ready to be active whenever you use that particular application.

Save Setup

With Save Setup you can save all the selections you've made in the Controls and Windows menus. For example, if you usually use the same settings for margins, headers/footers, wordwrap, overtype, windows colors, etc., you can choose the Save Setup command so that every time you open a new Macro Editor file, you don't need to make any changes.

Save Setup enables you to save window settings for the current Macro Editor, while the options for printing and formatting on the Controls menu are globally saved for *all* four Desktop applications that use printing (Notepads, Outlines, the Macro Editor and Databases). Unless you choose Save Setup, other commands you choose on the Controls and Windows menu affect only the current file.

Using Macros for Specific Operations

You can use macros for a variety of operations. Instructions for some of the uses of a macro are included in this section. In addition, the Appointment Scheduler chapter explains how to use alarms to run a macro. You will learn how to do the following:

- Build printer control macros
- Override an active macro
- Open PC Tools Desktop with a macro
- Open any PC Tools Desktop application with a macro
- Open other applications
- Link macros together
- Insert the date and time in a macro
- Add delays
- Create forms entry delays

To Build Printer Control Macros:

Note: Printer macros are usable only in Desktop Notepads, Outlines, and Database forms.

Printer control macros are commands inserted into the text of a document which, when you print the document, will create special formatting features such as boldface, italic, superscript, etc. when printing. The commands themselves do not appear in the text when you print; the commands are sent to your printer, thus you need special commands for whatever printer you use.

In addition, you can send setup commands to your printer for your favorite font, type size, printing mode, etc. In each of the sample printer macro files on the PC Tools Deluxe disk you will find a macro called SETUP. Anytime you print a file, Desktop automatically looks for the SETUP macro in your currently defined printer macros. If found, Desktop issues the printer commands in this macro to the printer just as if you had entered the macro into your file. Anytime you want to print a document with special fonts, type size, etc., you don't need to remember to put the macro in each file. Desktop does it for you.

This section will first explain how to build macros for printing then explain how to use them with a sample Notepad file.

PC Tools Desktop has been shipped to you with printer control macros for the Epson FX-80, the IBM Proprinter, the HP Laserjet, and Panasonic printers. An example printer control macro is shown below:

```
<begdef><ctrlf9>|BOLDON|<esc>E<enddef>
```

When this example macro is inserted into the text, the text will be printed in boldface type.

Note: Printer control macros cannot be nested.

If you want to build your own printer control macro or change and enhance the supplied macros, here's what you do:

To Turn the Control On:

The instructions below use the following example printer control macro:

```
<begdef><ctrlf9>|BOLDON|<esc>E<enddef>
```

1. Press Alt and the + key at the top of your keyboard.
   <begdef> is displayed.
2. Press the keystroke combination for this macro.
   In the example, typing Ctrl and F9 is used to turn on bold face printing.
3. Press the | key and type the text you want to have displayed in your Notepads file when this macro is used, and then press the | key again.
   In the example, "BOLDON" represents the beginning of boldface printing.
4. Type in the function of the macro, in this example, `<esc> E`.
   The function is not performed until the text is printed. When the text is printed, the word "|BOLDON|" is replaced with the printer code

necessary for boldface printing. (See your printer manual for the necessary printer codes.)

5. Press Alt and the - key at the top of the keyboard to end the macro. <enddef> is displayed.

To Turn the Control Off:

The instructions below use the following example printer control macro:

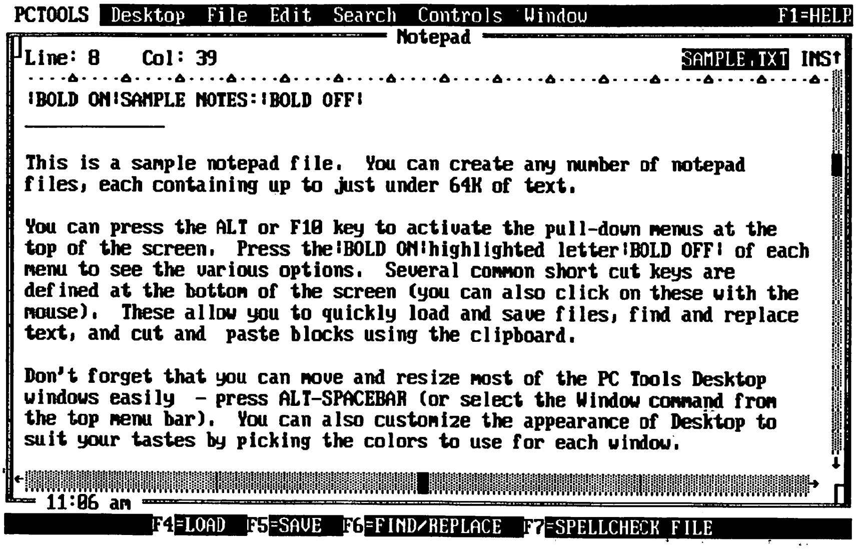
```
<begdef><ctrlf10>|BOLDOFF|<esc>F<enddef>
```

1. Press Alt and the + key at the top of your keyboard. <begdef> is displayed.
2. Press the keystroke combination for this macro. In the example, typing Ctrl and F10 is used to turn off bold face print.
3. Press the | key and type the text you want to have displayed in your Notepads file when this macro is used, and then press the | key again. In the example, "BOLDOFF" represents the end of boldface printing.
4. Type in the function of the macro, in this example, `<esc> F`. The function is not performed until the text is printed. When the text is printed, the word "|BOLDOFF|" is replaced with the printer code necessary to end boldface printing. (See your printer manual for the necessary printer codes.)
5. Press Alt and the - key at the top of the keyboard to end the macro. <enddef> is displayed.

Note: Place any printer setup commands you want in the line between |SETUP| and <enddef> in the SETUP macros on your program disk. These commands are sent to your printer before any of your Notepads, Outlines, or Macro Editor files are printed.

To Use Printer Macros in a Document:

The Macro Editor enables you to create macros you can insert in a Notepads file to send commands to your printer for custom printing features such as boldface, italics, etc. Below is a sample Notepad showing you what a printer macro for boldface printing looks like in the document and the instructions for using printer macros.



```
!BOLD ON!SAMPLE NOTES:!BOLD OFF!
______________

This is a sample notepad file.  You can create any number of notepad
files, each containing up to just under 64K of text.

You can press the ALT or F10 key to activate the pull-down menus at the
top of the screen.  Press the!BOLD ON!highlighted letter!BOLD OFF! of each
menu to see the various options.  Several common short cut keys are
defined at the bottom of the screen (you can also click on these with the
mouse).  These allow you to quickly load and save files, find and replace
text, and cut and  paste blocks using the clipboard.

Don't forget that you can move and resize most of the PC Tools Desktop
windows easily  - press ALT-SPACEBAR (or select the Window command from
the top menu bar).  You can also customize the appearance of Desktop to
suit your tastes by picking the colors to use for each window.
```

Notepad with printer macros for a Panasonic printer

1. Write your document using Notepads.
2. Insert the macro commands where you want custom printing features.
3. Choose **Macro activation** from the File menu in the Macro Editor and select the following option: Active when in PC Tools Desktop.
4. Save the Notepad file in PC Tools Desktop format.
5. Choose **Print** to print your file.
   The designated printing features appear in the document.

To Override an Active Macro:

Keyboard macros override any other key definitions, including the special keys used by Desktop. If you have an active macro that defines, for example, the F1 key to do some task, and you now want to get help in Desktop (which also uses the F1 key), you need to temporarily disable the F1 macro key so it will perform the normal Desktop help function.

You can tell the Macro Editor to ignore any macro definition for your next keystroke so that the key retains its original function.

- Press the back quote character (`) before the key you want to use.
  The back quote character is the unshifted ~ (tilde) key on IBM PC keyboards.

In the above example, pressing `, then the F1 key enables you to get help without interference from your predefined F1 macro.

Note: Another way to override a macro definition is to turn the macro playback OFF when you are in your application. Do this from the File menu by choosing the **Macro Activation** command.

You can also override, or change, keys and key shift states on your keyboard. For example, if you are accustomed to typing on a typewriter, you will notice not every key on a computer keyboard is the same as a typewriter keyboard. You can redefine the computer keyboard to emulate a typewriter keyboard with macro definitions.

For example, on the typewriter keyboard, when you press Shift and the comma key, you type a comma, and when you press the Shift and the period key, you type a period. On the computer keyboard, however, when you press the Shift and the comma key, you produce the left angle bracket (<); when you press the Shift and the period key, you produce the right angle bracket (>).

Using the following macro definition, you can change the Shift - comma key and the Shift - period key into commas and periods independent of the shifted state, thus turning your computer Shift - period and comma keys into an emulation of the typewriter keys.

```
    <begdef> <shift,> , <enddef>
    <begdef> <shift.> . <enddef>
```

Remember, to use the original function of the key once you have written a macro that redefines that key, you need to use the ` (back quote) character to disable the previously defined macro in the macro definition. The following example shows you how to use the left and right angle brackets in a macro:

```
<begdef><ctrlz> ` <shift,>this text is in brackets` <shift.>
<enddef>
```

To Open PC Tools Desktop:

Note: PC Tools Desktop has to be running as a memory-resident program to perform this function.

PC Tools Desktop does not allow you to use the currently defined hotkey in a macro, but you can easily use a macro to open PC Tools Desktop by the following:

- Insert `<desk>` in your macro definition.

Inserting <desk> in a macro opens PC Tools Desktop independently of the current hot key sequence. The example below shows you a macro that will open PC Tools Desktop when you press Ctrl - F1.

```
<begdef><ctrlf1><desk><enddef>
```

To Open a PC Tools Desktop Application:

Note: PC Tools Desktop has to be running as a memory-resident program to perform this function.

You may use one of the application programs included in the PC Tools Desktop package more than others and want to be able to open it quickly. You can create a macro that will open any application.

```
<begdef><ctrlf2><desk>CA<enddef>
```

In this example, Ctrl - F2 opens the Algebraic Calculator.

To Open Other Applications:

Note: PC Tools Desktop has to be running as a memory resident program to perform this function.

You can open other programs using a macro just as easily as you can open PC Tools Desktop, but there is a small difference. The following is an example of a macro used to automatically run PC Tools Utilities' PC Backup:

```
<begdef><ctrlf3>cd\PCTOOLS<enter>PCBACKUP<enter><enddef>
```

Note that the name of the program is not contained within angular brackets.

In the example, the key combination Ctrl - F3 has been defined to change to the PC Tools directory and run PC Backup.

To Link Macros Together:

You can define a macro to play back other macros. Below is an example of linked macros:

```
<begdef><shiftf1>This is a test of one macro
<enddef><begdef><shiftf2>calling two others
<enddef><begdef><shiftf3><shiftf1><shiftf2><enddef>
```

- Press Shift and F3 to run the macro.
  Your screen displays the following text:
  This is a test of one macro calling two others.

You can link as many individual macros as you want, but you can only nest up to ten deep. The third macro in the above example is nested one deep.

To Insert the Date and Time In a Macro:

The Macro Editor gives you an easy way to insert the current date and time in your macro definition by using the special key names "date" and "time." You can also define a key to insert the date and time for you. Below is an example of how to define a date and time macro:

```
<begdef><ctrld><date>, <time><enddef>
```

When you press Ctrl and d, the date and time is taken from the system clock and displayed in this form:

```
11-08-88, 4:30
```

Be sure to set the correct time and date whenever you boot your computer.

To Add Delays:

Inserting a delay into a macro definition tells the Macro Editor to pause during playback for a specified period of time. You can specify time increments from 1/10 of a second to 256 hours.

Delays are useful in a variety of applications. You can use a macro delay in your telecommunications program to dial a database and retrieve information you need at night when the rates are lowest. Delays are also useful for creating on-line demos or help screens. You can define a macro to delay for a specified amount of time after each page of text appears on the screen and then continue to the next page when the time has elapsed.

Macros are written with delays in the following form:

```
<cmd>dn<enter>
```

An example of a macro with a delay is shown below:

```
<begdef><ctrlf4>wait four seconds. . .
<cmd>d4<enter>Done<enddef>
```

Pressing Ctrl - F4 causes the message "Done" to run after a 4 second delay.

The labels used in the delay are defined below:

cmd: stands for command, telling the Macro Editor the next few entries are to be taken as commands instead of key definitions. The cmd label is not generated by a key sequence, you must type the label yourself.

d: stands for delay.

n: stands for the length of the delay. The length of the delay is typed in a specified format: hh:mm:ss.t (hours, minutes, seconds, and tenths of seconds). Below are some examples of time increment formats:

10:0:0	ten hour delay
9:0	nine minute delay
10	ten second delay
.5	half a second delay

enter: stands for the tag that must always end a delay. The Enter code is part of the macro and is played back.

To Interrupt a Delay:

- Press Esc to cut short a delay and play back the rest of the macro.

To Create Forms Entry Delays:

With forms entry (fill-in-the-blanks) you can delay a macro to enter specific information. For example, you can create a macro to automatically do a directory listing with a fill-in-the-blank that asks you for a disk drive. The two types of forms entry are fixed-length and variable-length.

Fixed-Length Fill-in-the-Blanks

When you know that the length of the information you are entering is always the same, fixed-length fill-in-the-blanks are useful. Some examples of fixed-length pieces of information are selections from a menu, disk drives, and dates. Here is an example of a macro that will execute the DOS "Dir" (directory) command, after allowing you to fill in the drive letter.

1. Press Alt and the + key to mark the beginning of your macro.
   <begdef> is automatically displayed.

2. Press the key(s) you want to use, for this example, use Ctrl and R, and then type dir and leave a space.
3. Press the Ctrl key and the] key.
   The ffld label (fixed field label) is displayed.
4. Type the # character and press Ctrl and] again.
   The # character does not appear during macro playback. It is used to indicate the fixed length of the field, in this case, one character, although you can specify a longer field by using more characters. You can use any character; # is arbitrary.
5. Type a colon and press Enter.
6. Press Alt and the - key to mark the end of the macro.
   <enddef> is automatically displayed.

The macro you type looks like this:

```
<alt><+><ctrl><r>dir <ctrl><]>#<ctrl><]>:<enter><alt><->
```

The macro is displayed on the screen like this:

```
<begdef><ctrlr>dir <ffld>#<ffld>:<enter><enddef>
```

To run the macro, perform the following task:

1. Press Esc to go back to the DOS prompt.
2. Press Ctrl and R.
   The Macro Editor generates "dir", leaves a space, and pauses so you can enter a disk drive specifier (a, b, or c). After you type in the letter, the macro continues, and DOS displays the appropriate directory listing.

Variable-Length Fill-in-the-Blanks

You can also create a macro that allows you to enter information of varying lengths. Here is an example of a macro that will execute the DOS "Dir" (directory) command after waiting for you to enter a file name specifier.

1. Press Alt and the + key to mark the beginning of your macro.
   <begdef> is automatically displayed.
2. Press the key(s) you want to use, and then type dir and leave a space.
   For this example, use Ctrl and F.
3. Press the Ctrl key and the - key.
   The vfld label (variable field label) is displayed.
4. Type .. and press Ctrl and - again.
   The two periods are simply place holders for you to insert whatever you

want in the field during macro playback. Any character can be used as a place holder to indicate that information can be entered in the macro.

5. Press Alt and the - key to mark the end of the macro.
   <enddef> is automatically displayed.

The macro you type looks like this:

```
<alt><+><ctrl><f>dir <ctrl><->..<ctrl><-><enter><alt><->
```

The macro is displayed on the screen like this:

```
<begdef><ctrlf>dir <vfld>. .<vfld><enter><enddef>
```

To run the macro, perform the following:

1. Press Esc to go back to the DOS prompt.
2. Press Ctrl and the F key.
   The Macro Editor generates "dir", leaves a space, and pauses so you can type in a file name. After you type in the file name, the macro continues. You have to press the Enter key to get a directory display when using variable field macros. Enter is not part of the text copied to your program.

Macro Editor Supported Keys

Below is a list of all keys used to define macros in the Macro Editor. It is recommended that you use Ctrl instead of Alt keys inside PC Tools Desktop since the Alt key is used to pull down menus and choose commands. The Alt key can be used in other programs.

Key	Shift	ALT	Control
a	A	alt a	ctrl a
b	B	alt b	ctrl b
c	C	alt c	
d	D	alt d	ctrl d
e	E	alt e	ctrl e
f	F	alt f	ctrl f
g	G	alt g	ctrl g
h	H	alt h	ctrl h
i	I	alt i	ctrl i
j	J	alt j	ctrl j
k	K	alt k	ctrl k
l	L	alt l	ctrl l
m	M	alt m	ctrl m
n	N	alt n	ctrl n
o	O	alt o	ctrl o
p	P	alt p	ctrl p
q	Q	alt q	
r	R	alt r	ctrl r
s	S	alt s	
t	T	alt t	ctrl t
u	U	alt u	ctrl u
v	V	alt v	ctrl v
w	W	alt w	ctrl w
x	X	alt x	ctrl x
y	Y	alt y	ctrl y
z	Z	alt z	ctrl z
1	!	alt 1	
2	@	alt 2	

3	#	alt 3	
4	$	alt 4	
5	%	alt 5	
6	^	alt 6	
7	&	alt 7	
8	*	alt 8	
9	(	alt 9	
0	)	alt 0	
F1	shift F1	alt F1	ctrl F1
F2	shift F2	alt F2	ctrl F2
F3	shift F3	alt F3	ctrl F3
F4	shift F4	alt F4	ctrl F4
F5	shift F5	alt F5	ctrl F5
F6	shift F6	alt F6	ctrl F6
F7	shift F7	alt F7	ctrl F7
F8	shift F8	alt F8	ctrl F8
F9	shift F9	alt F9	ctrl F9
F10	shift F10	alt F10	ctrl F10
-	_		
=	+		
[	{		
]	}		
;	:		
'	"	~	
\	|		
,	<		
0	>		
/	?		
Esc			
Tab	Shift Tab		
bks			ctrl bks
Enter			ctrl Enter
*			ctrl prt
home			ctrl home
up			
pgup			ctrl pgup
rgt			ctrl rgt
left			ctrl left

end			ctrl end	
dn				
pgdn			ctrl pgdn	
ins				
del				
Keypad 9				
Keypad 8				
Keypad 7				
Keypad 6				
Keypad 5				
Keypad 4				
Keypad 3				
Keypad 2				
Keypad 1				
Keypad 0				
Keypad period				
Keypad +				
Keypad -				
date				
ffld				
time				
vfld				
desk				
cmd				
begdef				
enddef				

Clipboard

Among the most useful of the PC Tools Desktop features are the copy and paste functions. You can not only copy and paste in many of the PC Tools Desktop applications, for example, Notepads, Outlines, and the Macro Editor, but when you are running Desktop as a memory resident application, you can also use the Clipboard application to copy and paste anything appearing on your screen between your other programs and PC Tools Desktop applications.

The Clipboard is a temporary storage place for text transferred with **Cut** and **Copy** commands. Once text has been placed on the Clipboard with **Cut** or **Copy** commands, you can open the Clipboard application to edit its contents. Although you don't have to open the Clipboard to use copy and paste operations, opening the Clipboard allows you to edit the text on the Clipboard before you paste it in another location.

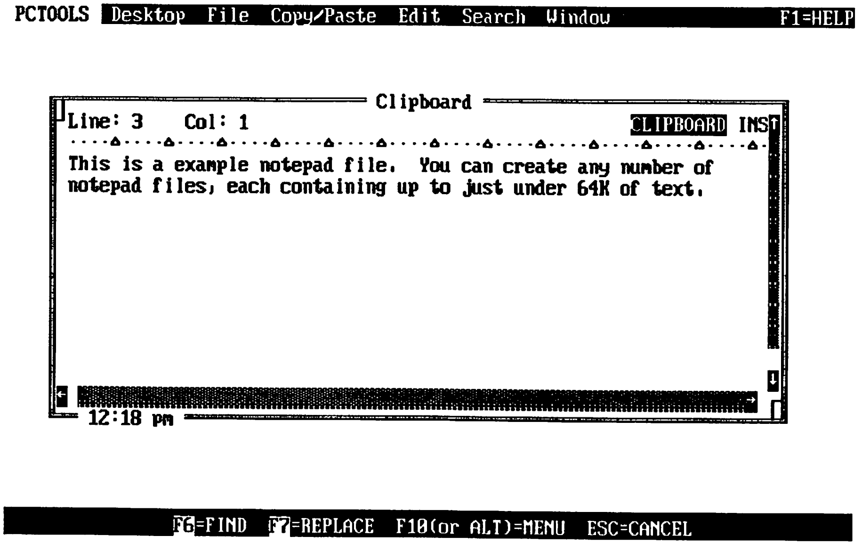
Using the Clipboard, you can transfer data between DOS applications. For example, you can copy data from a spreadsheet and then transfer it to a report in Notepads or another word processor.

The Clipboard expands to accommodate fairly large blocks of text, and all window scrolling capabilities are available to edit files on the Clipboard. The text the Clipboard can handle, however, is limited to 2K in size (approximately 40-50 lines of text). If you attempt to copy or cut a larger block of text, the Clipboard displays a warning message.

Note: The Clipboard only copies text; it does not copy graphics.

Opening the Clipboard

Once **Clipboard** is chosen from the Desktop pull-down menu, the Clipboard window (shown below) appears, allowing you to view and edit the contents of the Clipboard.



This is a example notepad file. You can create any number of notepad files, each containing up to just under 64K of text.

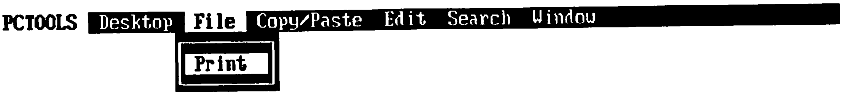
From top to bottom, the Clipboard screen contains the following parts:

- **Clipboard Horizontal Menu bar:** contains the names of pull-down menus and on-line Help for quick answers and guidelines.
- **Window border:** indicates the active window with a double border. The inactive window has a single border. The time is also displayed on the lower left corner of the active window's border.
- **Clipboard window:** contains the text of the file you've placed on the Clipboard.
- **Close box:** used with the mouse to close a window.
- **Status line:** shows what line and column the cursor is on, the file name, and whether you are in insert or overtype mode. When INS does not appear in the upper-right corner of the window, you are in overtype mode.
- **Tab ruler:** used to see tab stops.
- **Selection bar:** blank space in the first column used with the mouse to select a line of text.
- **Scroll bars:** used with the mouse to move, or "scroll" through the file.
- **Resize box:** used with the mouse to resize the window.

- **Message bar:** contains messages to guide you through your work. You can select any of these commands by pressing the highlighted function key or positioning the mouse cursor on any portion of the command or highlighted key and clicking the mouse. For example, to find a character string just press F6 or click anyplace on "F6=FIND" with the mouse; this brings up the Find dialog box.

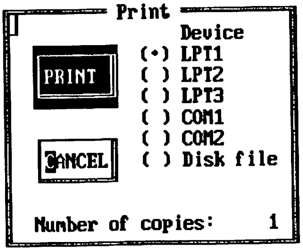
Printing the Contents of the Clipboard

The File pull-down menu contains the Print command so that you can print the contents of the Clipboard.



Print

1. Choose **Print** from the File menu.
   The Print dialog box appears.



Device
(•) LPT1
( ) LPT2
( ) LPT3
( ) COM1
( ) COM2
( ) Disk file

Number of copies: 1

2. Select any of the following **Print** options:

   LPT (1, 2, or 3): selects which one of the parallel printer ports to print your file to. Printer port number 1 is the default.

   COM (1, 2): selects which one of the serial printer ports to print your file to.

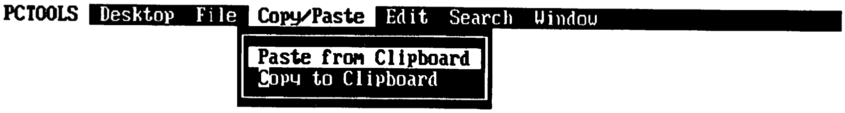
   Disk file: formats and saves the text for printing and writes the file to disk for printing at a later date. The print file name consists of the same file name with a .PRT extension.

   Number of copies: specifies the number of copies you want to print.

3. Select the **Print** command button to start printing.
   While you are printing either to disk or to the printer, a message appears in the Status line.

Copying to and Pasting from the Screen

Once you have loaded PC Tools Desktop as a memory resident application, you can transfer information between different applications using the commands on the Copy/Paste menu shown below. You can copy to and paste from whatever was on the screen before you opened the Clipboard application. For example, you can copy a section of your spreadsheet to the Clipboard then paste it into a financial report you are working on with your word processing program.



Paste from Clipboard:

Pasting allows you to insert the contents of the Clipboard into the application underneath the Clipboard window. Any text placed in the Clipboard will remain there until you replace it with other text or reboot the program. The contents of the Clipboard are pasted at the cursor position. If you don't have an application open, the contents of the Clipboard are copied to DOS.

- Choose **Paste from Clipboard** from the Copy/Paste menu.
  The Clipboard window disappears, and the Clipboard text is placed in the underlying application (or screen) at the cursor position.

  You can insert the copied text from the Clipboard as many times as you wish.

Copy to Clipboard

To put information on the Clipboard, use the Copy To Clipboard command. When you copy text from an application on the screen to the Clipboard, the selected text appears in both locations. Most applications require that you first select the information you want to copy.

Remember: this procedure calls for Desktop to be resident. From whatever application you are currently using, perform the following:

Keyboard

1. Hotkey into Desktop.
2. Choose **Copy to Clipboard** from the Copy/Paste menu.
   The Clipboard window disappears, leaving you in your previous screen to select text from the screen.
3. Press the Up, Down, Right, and Left arrow keys to position the cursor where you want to start copying text and press Enter. (The cursor, in this case, is a large block cursor, like the mouse cursor.)
4. Press the Up, Down, Right, and Left arrow keys to mark the block of text to be copied.
   The block is highlighted.
5. Press Enter to copy the selected text to the Clipboard.
   The selected text is copied to the Clipboard, and the Clipboard automatically opens for you to edit its contents.

or

Mouse

1. Hotkey into Desktop.
2. Choose **Copy to Clipboard** from the Quick menu.
   The Clipboard window disappears, leaving you in your previous screen to select text from the screen.
3. Place the mouse pointer where you want to start copying text.
4. Drag the mouse over the block you want to copy.
   The highlighted block of text is copied to the Clipboard, and the Clipboard automatically opens for you to edit its contents.

Note: Usually, the formatting for your text is not stored on the Clipboard, but this varies from application to application.

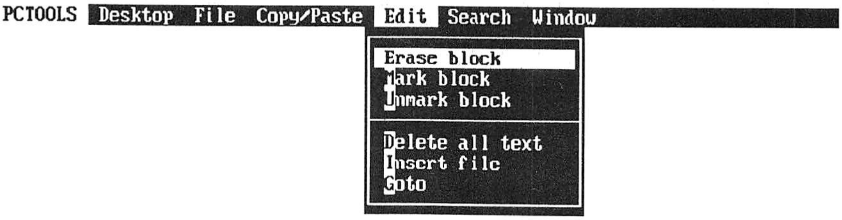
Editing Text on the Clipboard

When copied text is stored on the Clipboard, you may want to edit it. You can edit text using the keyboard or the mouse before you paste it into another location.

To Edit Text Using the Keyboard:

The basic editing operations and keys that perform them are explained in the Notepads chapter.

The Edit pull-down menu below contains the following commands for editing text on the Clipboard.



Erasing, Marking and Unmarking Blocks of Text

Once information has been copied onto the Clipboard, you can edit it. Since you may want to edit large portions of text, the **Erase, Mark and Unmark** commands are available to you.

Erase Block

1. Place the cursor where you want to start erasing text.
2. Choose **Mark block** from the Edit menu.
3. Use the Up, Down, Left and Right arrow keys to mark the block. The selected text is highlighted.
4. Choose **Erase block.**

or

1. Place the cursor where you want the block to start.
2. Hold down the Shift key, then press the arrow keys to mark the block. (You can use either the keypad arrow keys or the cursor arrow keys.) The selected text is highlighted.
3. Choose **Erase block** to erase the block.

or

1. Place the mouse pointer where you want the block to start and drag the mouse to mark the block. The selected text is highlighted.
2. Choose **Erase block.**

Mark Block

1. Place the cursor where you want the block to start.
2. Choose **Mark block** from the Edit menu.

3. Use the Up, Down, Left and Right arrow keys to mark the block.
   The selected text is highlighted.

   or

1. Place the cursor where you want the block to start.
2. Hold down the Shift key, then press the arrow keys to mark the block. (You can use either the keypad arrow keys or the cursor arrow keys.) The selected text is highlighted.

   or

- Place the mouse pointer where you want the block to start and drag the mouse to mark the block.
  The selected text is highlighted.

Unmark Block

If you decide that the block of text you've marked is incorrect, you can unmark it.

Short cut

- Press the Esc key to quickly unmark the block.

- Choose **Unmark block** from the Edit menu.

  or

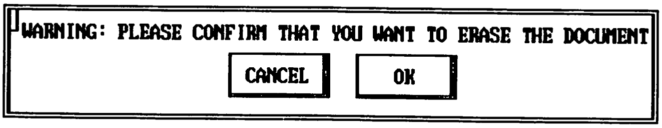
  Click the left mouse button anywhere in the window.
  The highlighting goes away.

Deleting Text

The Delete all text command deletes all of the text on the Clipboard, but does not delete the Clipboard. The Clipboard remains open, but will be empty.

Delete all Text

1. Choose **Delete all text** from the Edit menu.
   A message box appears asking you to confirm that you want to erase all of the text.


WARNING: PLEASE CONFIRM THAT YOU WANT TO ERASE THE DOCUMENT

2. Select **OK** to erase the document.

Inserting a File

The **Insert file** command allows you to merge a selected file with the file you are working on.

Insert File

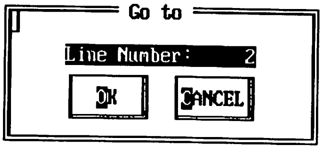
1. In the current file, place the cursor at the location you want the file to be inserted.
2. Choose **Insert file** from the Edit menu.
   The File Load dialog box appears.
3. Select the file you want to insert using the File Load dialog box.
4. Select the **Load** button.
   The selected file is merged with the current file and inserted at the cursor position.

Moving to a Specific Line

The line display on the Status line in the upper left corner of the Clipboard window allows you to see which line the cursor is on. To move quickly through a file or to move to a particular line, use the **Goto** command.

Goto

1. Choose **Goto** from the Edit menu.
   The Goto line number dialog box is displayed.



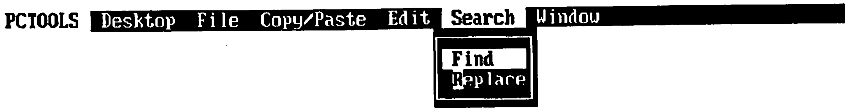
Line Number: 2

2. Type the number of the line you want to go to.

3. Select **OK** to go to the specified line.
   The dialog box closes and the text and cursor are moved to the top of the window.

Searching in the Clipboard

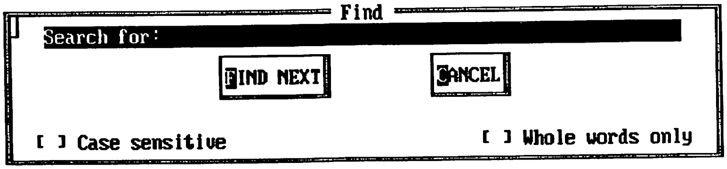
While editing, you can use commands on the Search menu to find, change, or replace specified text.



Find

The **Find** command searches through your file to find specified text. Beginning at the cursor, the Clipboard is searched for the specified text and stops, with the cursor positioned at the beginning of the string. You can specify a string up to 44 characters.

1. Choose **Find** from the Search menu.
   The Find dialog box is displayed.



2. Type the character string you want to find in the Search for text box.
3. Select any of the following **Find** options:

   Case sensitive: finds only the specified uppercase and lowercase characters. With this option turned off, text is found regardless of its capitalization.

   Whole words only: finds whole words only, not partial words. For example, if searching for "the," "the," not "theater" will be found.

4. Select the **Find Next** command button.
   The Clipboard is searched for the specified text and stops, with the cursor

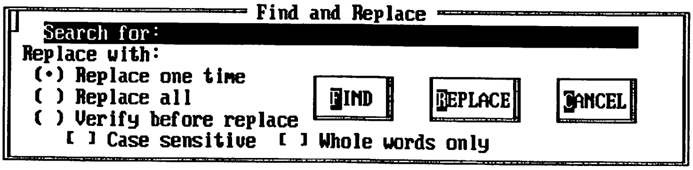
positioned at the beginning of the string.

The dialog box is displayed until you close it or until the last occurrence of the search text is found.

Replace

The **Replace** command searches the file for a specified character string and replaces it with text you specify. You can specify a character string up to 44 characters. With the **Replace** command, you can either review each occurrence of the string and decide whether or not to change it, or replace all occurrences of the text automatically.

1. Choose **Replace** from the Search menu.
   The Replace dialog box is displayed.



Find and Replace

Search for:

Replace with:

● Replace one time

○ Replace all

○ Verify before replace

☐ Case sensitive ☐ Whole words only

2. Type the text you want to replace in the Search For text box.
3. Type the replacement text in the Replace With text box.
4. Select any of the following Replace options:

   Replace one time: finds and replaces the next occurrence of the search text.

   Replace All: replaces all the occurrences of the found text with the specified text from the cursor position to the end of the file.

   Verify before replace: searches text from the cursor position to the end of the file, stopping at each occurrence of the word and replacing found text only when you press Enter. If you press Esc, the command is canceled; pressing the spacebar skips the specified text.

   Case sensitive: finds only the specified uppercase and lowercase characters. With this option turned off, text is found regardless of its capitalization.

   Whole words only: finds whole words only, not partial words.

5. Select one of the **Replace** command buttons:

Find: finds the text, without carrying out any changes.

Replace: replaces the found text with the specified text.

The dialog box is displayed until you close it, until the search and replace is finished, or if you choose the **Cancel** command button.

Copying and Pasting with the Hotkeys

Once you've loaded PC Tools Desktop memory resident, you can copy and paste in any application or from the screen; you don't need to open the Clipboard application. Quick copying and pasting functions are available with cut and paste hotkeys. The hotkey sequence is changeable; if you want to change the hotkeys, see the Utilities chapter.

To Copy from the Screen to the Clipboard:

When you copy text from the screen, text currently placed on the Clipboard is replaced by the new text from the screen. Text copied to the Clipboard from the screen can be pasted into any application.

Keyboard

1. Exit PC Tools Desktop.
2. Press Ctrl - Del to copy text to the Clipboard.
   The cursor appears to select text from the screen.
3. Press the Up, Down, Right, and Left arrow keys to position the cursor where you want to start copying text and press Enter.
4. Press the Up, Down, Right, and Left arrow keys to mark the block of text to be copied.
   The block is highlighted.
5. Press Enter to copy the selected text to the Clipboard.
   The selected text is copied to the Clipboard. To edit the Clipboard's contents, hotkey into Desktop and open the Clipboard.

Mouse

1. Exit PC Tools Desktop.
2. Press Ctrl - Del to copy text to the Clipboard.
   The cursor appears to select text from the screen.
3. Place the mouse pointer where you want to start copying text and press the mouse button.
4. Drag the mouse over the block you want to copy and release the mouse button.

The selected text is copied to the Clipboard. To edit the Clipboard's contents, hotkey into Desktop and open the Clipboard.

To Paste from the Clipboard to the Screen:

PC Tools Desktop temporarily keeps the copied screen in the Clipboard until you copy something new over it. When something new is copied into the Clipboard, it becomes the contents of the Clipboard. When you are not in PC Tools Desktop, you may do the following:

1. Place the cursor wherever you want the copied text to be inserted.
2. Press Ctrl - Ins.
   The copied text from the Clipboard is pasted at the insertion point.

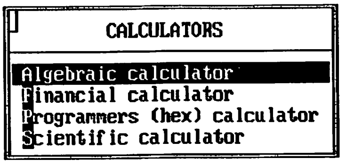
Calculators

PC Tools Desktop has four calculators for a wide variety of uses. Included are a simple Algebraic Calculator, a Scientific Calculator which enables you to perform simple as well as advanced calculations (patterned after the HP-11C manufactured by Hewlett-Packard), a complete financial calculator which emulates most financial functions of the HP-12C calculator (also manufactured by Hewlett-Packard), and a programmer's calculator.

Since PC Tools Desktop can be memory resident, you have access to your choice of calculators from any program.

Selecting a Calculator

Once **Calculators** is selected from the Desktop pull-down menu, the calculator menu is displayed. The illustration below shows you what you'll see when you choose Calculators from the Desktop menu:

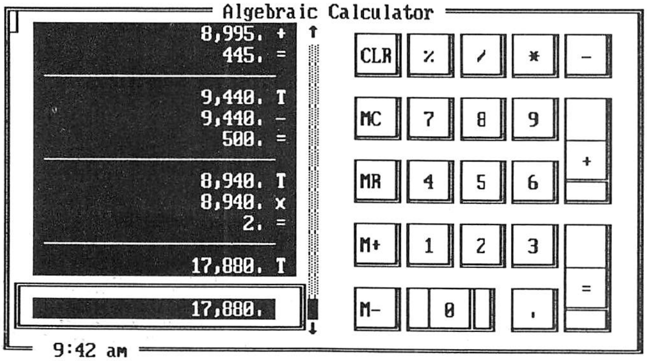


- Select the calculator you want to use.

Using the Algebraic Calculator

The Algebraic Calculator operates like a standard printing calculator. Use the keys on the numeric keypad on the right of your keyboard, the numbers along the top of your keyboard, or click on the "keys" on the screen with a mouse to add, subtract, multiply and divide. When you choose **Algebraic Calculator** from the menu, the Algebraic Calculator appears in its window. As you enter numbers and perform operations, the numbers appear first in the display and then on the "tape."

Note: The calculator tape is approximately 1000 lines long. When the tape becomes full, the lines at the top of the tape will be lost.



```
  8,995. +
    445. =
---------
  9,440. T
  9,440. -
    500. =
---------
  8,940. T
  8,940. x
      2. =
---------
 17,880. T

 17,880.
```

The parts of the Algebraic Calculator window are described below:

- **Window border:** indicates the active window with a double border and displays the time on the lower left corner. The inactive window has a single border.

- **Close box:** used with the mouse to close a window.

- **Scroll bar:** used with the mouse to move, or "scroll" through the numbers appearing on the tape.

- **Calculator tape:** where up to 12 lines of calculations appear. You can scroll the tape with the keys or the mouse to display numbers.

- **Calculator display:** where numbers appear as you enter them. Numbers can also be "scrolled" into the display area to be edited.

- **Calculator keys:** used with the mouse to perform computations.

Note: You may have to press the Num Lock key to use all the numbers on your numeric keypad.

To Perform Calculations:

The basic calculator operations and the keys that perform them are contained in the table below:

To	Keyboard	Mouse
Add	+	+
Subtract	-	-
Multiply	* or x	*
Divide	/	/
Total or equal	Enter or =	=
Clear	C	CLR
Calculate percentages	%	%
Add or subtract a number from memory	M then + or -	M+ or M-
Recall a number from memory	M then R	MR
Erase a number from memory	M then C	MC
To set the number of decimal places	D then the number	
Toggle the comma display	,	,

The Algebraic Calculator operates like a printing calculator. Enter a number, followed by the operation, subsequent number, and equal sign. Each number appears in the calculator display, and as you continue to enter numbers, they are displayed on the tape. You can calculate as many numbers as you want; however, the tape only shows up to 12 lines at a time.

To perform the calculation 5 + 7 =, follow these steps:

1. Press 5.
   Five appears in the calculator display.
2. Press + (the operation).
   The number and operation are displayed on the tape as well as the display.
3. Press 7.
   Seven appears in the display, overwriting the 5.
4. Press Enter.
   The calculation is automatically performed and the result appears in the display as well as on the tape above the display. The operators (+, -, =, etc.) are saved to remind you what operation you performed and to show you the total (T).

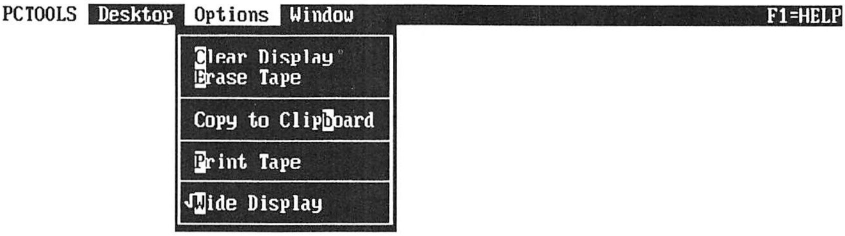
Note: An "M" appears to the left of the calculator tape to indicate that the memory is non-zero.

To Edit the Tape:

As you type, the calculations are displayed on the tape. The tape display records all the calculations. You can edit any number you've entered from the keyboard; calculated results are not editable. All editable numbers will appear in the tape display where they can be edited.

You can scroll through the tape using the scroll bar or the Up and Down arrow keys. You can edit and recalculate the tape. If you make a mistake in a lengthy calculation and don't realize it until later, you can go back and make a correction. Scrolling the tape puts the numbers into the calculator display where you can edit them. You can edit a number only when it appears in the display area.

1. Press the Up and Down arrow keys to move the numbers into the calculator display.
   or
   Scroll through the numbers on the tape using the mouse.
2. Type the number you want to change.
   The new number overwrites the old number in the display.
3. Press the End key to recalculate the tape.
   The numbers are recalculated and the new values appear in the display and on the tape.



Clear Display

If you make a mistake and want to retype the number appearing in the display, you can clear the display. To clear the number in the display perform the following task:

- Choose **Clear Display** from the Options menu or press F4.
  The number appearing in the display disappears.

Note: You can also clear the display by pressing the C key.

Erase Tape

If you want to clear all the numbers from the tape and start over, perform the following:

- Choose **Erase Tape** from the Options menu or press F5.
  The entire tape is erased.

Copy to Clipboard

You may want to use your calculations in a document; for example, you might want to prepare a sales report in Notepads, use your calculations in the text, then print the report. You can insert the results of your calculations into any application using the Clipboard.

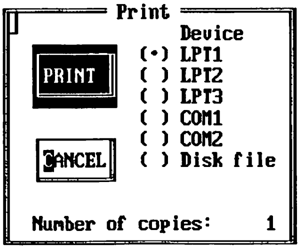
- Choose **Copy to Clipboard** from the Options menu.
  Up to 100 lines of the calculator tape are copied to the Clipboard. You can open the Clipboard to edit the copied calculations if you want.

Note: If the tape has more than 100 lines, only the last 100 lines are copied to the Clipboard.

Print Tape

If you want a copy of your calculations, you can print the calculator tape or save it to a disk file using the Print Tape command.

1. Choose **Print Tape** from the Options menu.
   The Print dialog box appears.



Device
(•) LPT1
( ) LPT2
( ) LPT3
( ) COM1
( ) COM2
( ) Disk file

Number of copies: 1

2. Select any of the following **Print** options:

   LPT (1, 2, or 3): selects which one of the parallel printer ports to print the tape to. Printer port number 1 is the default.

   COM (1, 2): selects which one of the serial printer ports to print the tape to.

   Disk file: formats and saves the tape for printing and writes the tape to disk for printing at a later date. The print file name is CALC.PRT, and Desktop saves it in the current directory.

   Number of copies: specifies the number of copies you want to print.

3. Select the **Print** command button to start printing.
   While you are printing either to disk or to the printer, a message appears in the Status line.

Wide Display

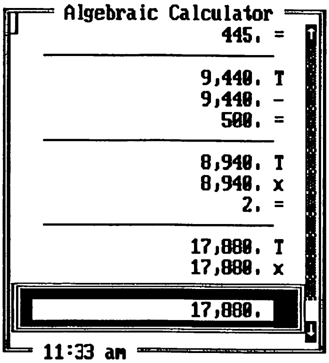
You can toggle the Algebraic Calculator between a full-screen calculator showing the tape display and the keypad or a smaller version showing the tape display area only. Both versions are fully functional.

To display the full calculator and the keypad, perform the following:

- Choose **Wide Display** from the Options menu.
  The full-screen calculator is displayed and a check mark appears to the left of the command.

The smaller version of the Algebraic Calculator provides all the functions of the full calculator; however, it takes up less room on your screen. To display the smaller version of the Algebraic Calculator without its keypad display, perform the following:

- Choose **Wide Display** from the Options menu.
  The small-screen calculator is displayed.



```
Algebraic Calculator
         445. =
     ------------
       9,440. T
       9,440. -
         500. =
     ------------
       8,940. T
       8,940. x
           2. =
     ------------
      17,880. T
      17,880. x

      17,880.
11:33 am
```

Using the Financial Calculator

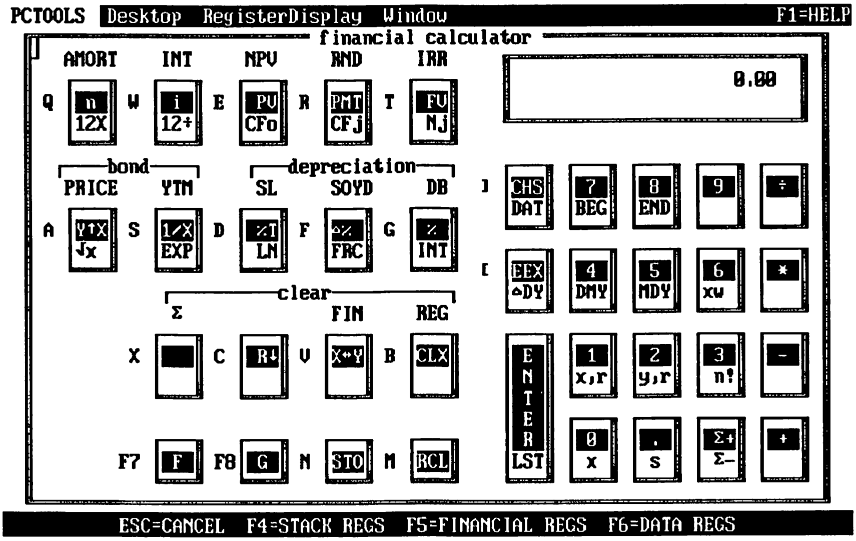
The Financial Calculator is designed to emulate the financial functions of the HP-12C® Calculator manufactured by Hewlett-Packard®.

This section explains how the functions of the HP-12C Calculator are emulated in PC Tools Desktop. If you are familiar with using the HP-12C, you will find that performing the same functions with the PC Tools Desktop version is easy. If you do not know how to use an HP-12C Calculator, this section is designed to familiarize you with how to use it.

Central Point Software, Inc. does not guarantee that the keystroke sequences and the results given are correct or suitable for your purposes. You are responsible for decisions you make when using the Financial Calculator.

This section is not intended as a comprehensive tutorial of the HP-12C calculator. If you want a more complete explanation of how to use the HP-12C, there are manuals available at most bookstores. In addition, we have provided an order form for a handbook at the end of this chapter.

When you choose **Financial Calculator** from the Calculators menu, an emulation of the HP-12C is displayed.



Understanding the Display

You must use several of the keyboard keys as well as the number keys with the Financial Calculator. Most of the keys on the Financial Calculator have more than one function. If you press the key to the left of the button on the display or click the button with the mouse, the function that appears in white (reverse video on monochrome monitors) on the screen is performed.

To make using the Financial Calculator easier, this section explains how to do the following:

- Use the keyboard
- Use the F and G keys
- Set the number of decimal places
- Turn "c" on or off in the display
- Turn "d.my" on or off in the display
- Turn "beg" on or off in the display

To Use the Keyboard:

This chapter refers to the keys by their functional names; the actual keys with their corresponding financial functions are displayed in the table below:

Press	To perform function
Q	n (number of periods)
W	i (interest rate)
E	PV (present value)
R	PMT (payment)
T	FV (future value)
A	Y^X (power)
S	1/X (reciprocal or inverse)
D	%T (percent of total)
F	Δ% (percent difference)
G	% (percent)
C	R⇓ (roll down)
V	X↔Y (exchange X and Y registers)
B	CLx (clear)
F7	F
F8	G
N	STO (store number)
M	RCL (recall stored number)
]	CHS (change sign)
[	EEX (exponent)
Return	Enter
&	Σ+ (sum of--used in statistics)
0-9	0-9
+	+
-	-
/	÷
*	x (multiply)

To Use the F and G Keys:

The F and G keys in the lower left portion of the calculator display allow you to perform additional functions.

Note: Select and release the F or G key *before* selecting the next key.

- Press the F7 key or click on the F key on your screen to perform the functions at the top of the keys (these functions appear in red on a color monitor).

- Press the F8 key or click on the G key on your screen to perform the functions on the lower part of each key (displayed in blue on color monitors).

To Set the Number of Decimal Places:

The Financial Calculator uses twelve digits of precision for all calculations no matter how many places you want to display. You can set up to nine decimal places.

1. Select the F key and then the desired number of decimal places.

   For example, to set the display to 4 decimal places, select the F key and then press 4. If you want to use scientific notation, select the F key and press . (period).

To Turn "c" On or Off in the Display:

The "c" in the display signifies continuous compounding during financial calculations involving partial periods.

- Select STO EEX to turn on or off the "c" in the display.

To Turn "d.my" On or Off in the Display:

When you see "d.my" in the display, any calendar date you key in must be in Day.MonthYear format. When this symbol does not appear in the display, all dates must be in Month.DayYear format. To turn "d.my" on or off in the display, perform the following task:

- Select G and then the DMY key.

To Turn "beg" On or Off in the Display:

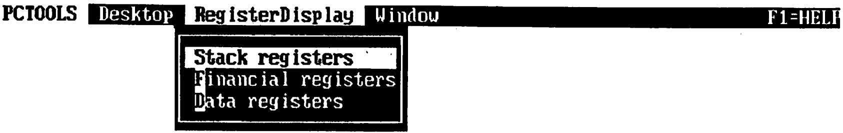
When you see "beg" in the display, any loan or annuity calculation is performed assuming each payment is made at the beginning of the payment period. When you don't see "beg" displayed, the payment is assumed to be due at the end of the payment period. To turn "beg" on or off in the display, perform the following:

- Select G and then the BEG key to display "beg."
- Select G and then the END key to turn "beg" off.

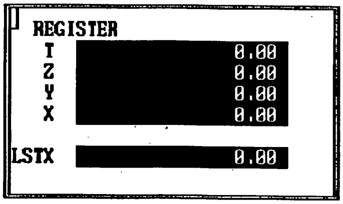
Understanding the Registers

The Financial Calculator contains three kinds of registers which store different kinds of numeric information: the stack registers, the financial registers, and the data registers. The registers continue to store numbers until the computer is turned off or until you exit the calculator application.

To view the contents of any of the registers, choose the appropriate kind of register from the Register Display menu shown below.

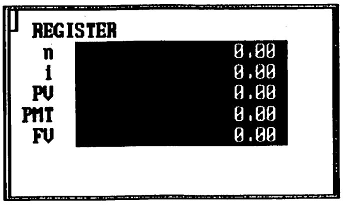


The **Stack registers:** perform ordinary arithmetic (addition, subtraction, multiplication, division) and are connected in a way that allows you to do lengthy calculations easily by stacking the intermediate results until you need them.



```
REGISTER
T      0.00
Z      0.00
Y      0.00
X      0.00

LSTX   0.00
```

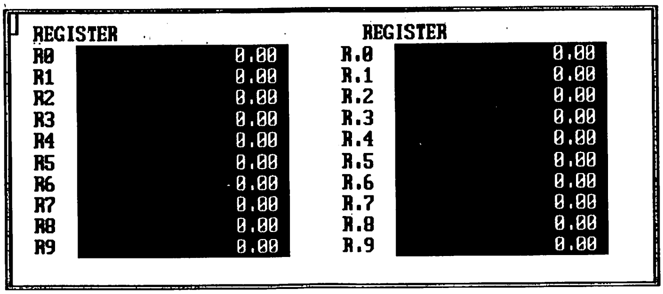
The **Financial registers:** calculate financial quantities such as mortgage payments. The calculator uses four of the numbers to calculate the fifth.
The names of each of the financial registers are identified below:



REGISTER	
n	0.00
i	0.00
PV	0.00
PMT	0.00
FV	0.00

n:	number of periods.
i:	interest rate.
PV	present value.
PMT	payment.
FV	future value.

The Data registers: named with numbers from 0 to 9 and from .0 to .9. Use these names when storing numbers in the registers.



REGISTER		REGISTER	
R0	0.00	R.0	0.00
R1	0.00	R.1	0.00
R2	0.00	R.2	0.00
R3	0.00	R.3	0.00
R4	0.00	R.4	0.00
R5	0.00	R.5	0.00
R6	0.00	R.6	0.00
R7	0.00	R.7	0.00
R8	0.00	R.8	0.00
R9	0.00	R.9	0.00

Performing Arithmetic Operations

The Financial Calculator can be used to perform simple as well as complex calculations; however, performing simple arithmetic calculations is done differently with the Financial Calculator than with an Algebraic Calculator.

This section shows you how to use the Financial Calculator to perform the following tasks:

- Add
- Subtract
- Multiply
- Divide
- Calculate percentages
- Change the sign
- Store and recall numbers

Performing arithmetic operations involves combining two or more numbers. On most calculators (including the Algebraic Calculator included in PC Tools Desktop) the procedure for adding 3 and 3 is the following:

3 + 3 =

But since the Financial Calculator emulates the HP-12C, the arithmetic operations are performed in the following way:

1. Enter the first number and press Enter.
   For example, press 3 then Enter.
2. Enter the second number and press the operation key
   (+ or -, etc.). For example, press 3 then the + key.

When you perform multiple calculations, each intermediate result becomes the first number of your next calculation. You don't need to enter in that number or press Enter; just type in the second number and press the operation key.

To Add:

Compute 34 + 169 + 51

1. Type 34, and press Enter.
2. Type 169 and press the + key.
3. Type 51 and press the + key.

To Subtract:

Compute 75 - 37- 13.9

1. Type 75 and press Enter.
2. Type 37 and press the - key.
3. Type 13.9 and press the - key.

The - key means subtract what's in X from what's in Y. The last number you type goes into the X register, and the number that was in X gets pushed into the Y register.

To Multiply:

Compute 1.2 * 45 * 9

1. Type 1.2 and press Enter.
2. Type 45 and press the * key.

3. Press 9 and press the * key.

To Divide:

Compute (34 + 169) ÷ 51.

1. Type 34 and press Enter.
2. Type 169 and press the + key.
3. Type 51 and press the / key.

To Calculate Percentages:

Compute 3.5% of 29.76

1. Type 29.76 and press Enter.
2. Type 3.5 and press the % key.

To Change the Sign of a Number:

Compute (1.2 x 45) / (-33)

1. Type 1.2 and press Enter.
2. Type 45 and press the * key.
3. Type 33 and select CHS (the] key) and then the / key.
   The - key is used for subtraction; to change the sign of a number, always use CHS.

To Store and Recall Numbers:

Use STO and RCL to save and recall copies of numbers. You also need to use the name of a data register (0 through 9 or .0 through .9) or a financial register (n, i, PV, PMT, or FV) when using these keys.

To Store a Number:

Compute (1.2 x 45) / (-33) and store the result in register 0 and in the PV register.

1. Type 1.2 and press Enter.
2. Type 45 and press the * key.
3. Type 33 and select CHS (press the] key).
4. Press the / key and select STO (press the N key).
5. Type 0 and select PV (press the E key).

When storing a number into one of the five financial registers, press the name of the register you want; you don't need to select STO first.

To Recall a Number:

Compute 6 x ((1.2 x 45) / (-33)) by recalling the result of the previous problem.

1. Select RCL (press the M key) and then select PV (press the E key).
2. Type 6 and press the * key.

or

1. Select RCL (press the M key) and type 0.
2. Type 6 and the * key.

Unlike STO, when you want to recall to the X register a copy of what's in one of the five financial registers, you must select RCL, just as with the numbered registers.

Performing Financial Calculations

You can use the Financial Calculator to perform the following:

- Calculate simple interest
- Calculate compound interest
- Calculate annual percentage rates

To Calculate Simple Interest:

To calculate simple interest on a 365 day basis, store the principal amount in the PV (present value) register and the annual interest rate in the i (interest rate) register. Store the number of days the interest is accruing in the n register.

What is the interest on a $80,000 loan at 12% interest over 15 days?

1. Select the F (press F7) key then the REG key (press B) to clear the financial registers.
2. Type 80000 and select PV (press E).
3. Type 12 and select i (press W).
4. Type 15 and select n (press Q).
   Steps 2, 3, and 4 store the appropriate numbers in their respective registers.
5. Select the F key (press F7) and select INT (press W).
   Result: $400.00 360 day interest.

The value is negative on this interest amount to show that if the money was borrowed, this interest is owed in return.

To Calculate Compound Interest:

You can calculate compound interest in one of two ways: straight line or continuous. Both patterns provide the same results at the end of each period but different results at interim points. To alternate back and forth between these two methods, select STO and EEX. A little "c" appears in the display to tell you the method is the continuous method.

The two methods give the same results if you examine the interest only at the end of each defined period. When you examine the interest (the total balance owed on a loan) somewhere during the period, you get different results. Because of this you need to be careful when working with a partial compounding period (when the n register has a fraction in it). You can do this with the Financial Calculator, but only if the partial period occurs at the beginning of the loan.

Whenever you solve for the number of periods (n) required in a loan situation, the Financial Calculator always rounds up to the next whole period. To double-check your result, re-solve for FV (future value) to see how much the loan would be overpaid by extending the time out to the next whole period.

To Calculate the Annual Percentage Rate (APR):

The APR in any loan situation is a convenient number to quote and to compare, but it is not the actual amount of cents earned on the dollar. The actual interest earned will depend upon how often the interest is compounding.

If the compounding period is a full year, then the APR is the actual rate of accrual. If the compounding period is a month, as in most mortgages, then the interest begins to accrue on interest earned in previous months. This makes the total cents earned on a dollar of original principal over a full year slightly more than the APR figure.

Solving Financial Key (5-key) Problems

The Financial Calculator is useful in solving 5-key problems. This section shows you how to perform the following tasks:

- Use the financial registers
- Observe sign conventions
- Calculate the number of payments (n)
- Calculate interest (i)
- Calculate principal (PV)
- Calculate payments (PMT)
- Calculate remaining balance (FV)

To Use the Financial Registers:

If you want to store numbers into any of the five financial registers, type in the number and select whatever financial key you want. If after doing so you press any other financial key, the calculator will compute the value belonging in that register based upon the numbers currently in the other four registers.

For example, typing 100 and then selecting FV stores 100 in the FV register. Typing 100 and then selecting FV and PV stores 100 in the FV register and then computes PV, based upon the values in n, i, PMT and FV.

The five financial registers are described below:

n: number of identical, sequential time periods occurring in the analysis.

i: interest rate accruing on money over each of these n periods. n and i always apply to the same period of time.

PMT: payment is the steady, once per period cash flow. There are n payments in any 5-key problem. This series of PMT's is what distinguishes a 5-key problem. If cash flows are not steady and level over time, it is not a 5-key problem.

PV: present value is any net cash flow that occurs at the beginning of the analysis period, other than a PMT. For a loan, this would be the beginning value of the loan, the money borrowed.

FV: future value is any net cash flow that occurs at the end of the analysis period, other than a PMT. For a loan, this is the amount of money still owed at the end of the loan period.

To Observe Sign Conventions:

To correctly perform a 5-key problem with the Financial Calculator, you must observe its sign conventions.

- Use a negative number for cash flows you pay out. Use the CHS key.
- Use positive numbers for cash flows you receive.
- PV, FV and PMT cannot have the same sign.

How To Use the Following Examples

The problems on the following pages are provided so you can practice using the functions of the Financial Calculator. Before solving any of the problems, you need to make sure the financial registers are clear.

Select the F key and then the REG key to clear the financial registers. (On the keyboard, press F7 then the B key.)

If you are using a mouse, the first column in each table shows you which key on the display to click. If you are using the keyboard, the second column shows you which keys you need to press. These keys are located to the left of the display keys. You need to enter any numbers in the table using the keypad or number keys on your keyboard. The third column explains the functions being performed. For example, the first line of the following table is explained below:

Mouse
Select the G key and then select the END key.

Keyboard
Press the F8 key and then press the keypad 8 key.

Explanation
This designates end-of-month payments.

To Calculate the Number of Payments (n):

How many $160 end-of-month payments will you need to pay off a $6,000.00 auto loan at 13.5% APR?

Strategy
Type in the known PV, PMT, i, and FV and solve for n. Then recalculate FV to check to see if the loan is overpaid on the last payment. This is done because the Financial Calculator always rounds up when it calculates n.

Mouse	Keyboard	Explanation
G END	F8 keypad 8	Payments are at month's end.
13.5 G i	13.5 F8 W	Use the G shortcut for converting an APR to monthly interest.

6000 PV	6000 E	Amount you received as a loan.
160 CHS PMT	160] R	Amount you must pay every month.
0 FV	0 T	Loan will be paid.
n	Q	Result: 49 months of payments.
FV FV	T T	Result: The last (49th) $160.00 payment is $2.95 too much.

To Calculate Monthly Interest Rates (i):

If exactly 48 end-of-month payments of $160 each will pay off your $6,000.00 auto loan, what is the APR of the loan?

Strategy

Type in the known PV, PMT, n, and FV and solve for i. Multiply the result by 12 to get the APR.

Mouse	Keyboard	Explanation
G END	F8 keypad 8	Payments are at month's end.
48 n	48 Q	There are 48 payments.
6000 PV	6000 E	Amount you received as a loan.
160 CHS PMT	160] R	Amount you pay every month.
0 FV	0 T	Loan will be paid off.
i	W	Result: monthly rate is 1.06%.
12 *	12*	Result: the APR is 12.68%.

To Calculate the Principal (PV):

If exactly 48 end-of-month payments of $160 each will pay off your 13.5% APR auto loan, what was the loan amount?

Strategy

Type in the known i, PMT, n, and FV and solve for PV. Observe the sign conventions carefully.

Mouse	Keyboard	Explanation
G END	F8 keypad 8	Payments are at month's end.
48 n	48 Q	There are 48 payments.
13.5 G i	13.5 F8 W	APR converted to monthly rate.
160 CHS PMT	160] R	Amount you pay every month.
0 FV	0 T	Loan will be paid off.
PV	E	Result: $5,909.22 (amount loaned).

To Calculate Payments (PMT):

What end-of-month payment amount will pay off your $6,000.00 loan at 13.5% APR in 48 months?

Strategy

Type in the known PV, i, n, and FV and solve for PMT. Pay attention to what the sign conventions mean.

Mouse	Keyboard	Explanation
G END	F8 keypad 8	Payments are at month's end.
48 n	48 Q	There are 48 payments.
13.5 G i	13.5 F8 W	APR converted to monthly rate.
6000 PV	6000 E	Amount you received as a loan.
0 FV	0 T	Loan will be paid off.
PMT	R	Result: payment is $-162.46.

To Calculate Remaining Balance (FV):

After you have paid 24 end-of-month payments of $160 each on your auto loan for $6,0000.00 at 13.5% APR, what is the remaining balance?

Strategy

Type in the known i, PMT, n, and PV and solve for FV. Observe the sign conventions, and remember that FV is always the balance owed after the last payment (PMT).

Mouse	Keyboard	Explanation
G END	F8 keypad 8	Payments are at month's end.
24 n	24 Q	Analysis after the 24th PMT.
13.5 G i	13.5 F8 W	APR converted to monthly rate.
6000 PV	6000 E	Amount of loan.
160 CHS PMT	160] R	Amount you pay every month.
FV	T	Result: $-3,467.63 (still owed).

Calculating Mortgages

A mortgage is a loan that is amortized (killed off) over time with regular, periodic payments. Figuring mortgages is ideal for 5 key solutions. This section shows you how to perform the following:

- Calculate simple and straightforward mortgage
- Calculate after changing the due date
- Calculate balloon payments on a mortgage
- Calculate discounted mortgages
- Calculate prepaid finance charges
- Calculate second mortgages and wraparounds
- Calculate variable rate mortgages
- Calculate amortization schedules

To Calculate Simple and Straightforward Mortgage:

You are a lender for a $120,000 home purchase, with $20,000 down and the rest financed for 30 years at 14% APR with the payments in arrears. What is the payment amount? What would the payment be for a 20-year term?

Strategy

Use a simple 5 key solution.

Mouse	Keyboard	Explanation
G END	F8 keypad 8	Payments are in arrears.
30 G n	30 F8 Q	(30 x 12) periods in the term.
14 G i	14 F8 W	APR converted to monthly rate.
100,000 CHS PV	100,000] E	Amount financed (negative to you).
0 FV	0 T	Loan is paid off at the end.
PMT	R	Result: $1,184.87 payment.
20 G n	20 F8 Q	Change the term to play "What if?"
PMT	R	Result: $1,243.52 payment.

To Calculate after Changing the Payment Due Date:

Solve the problem above, but this time assume that each monthly payment is due at the beginning of that month. Use the BEG mode.

The keystrokes are the same as above, except the second keystroke is G BEG. The result is $1,171.21 and $1,229.18.

Press G BEG to display "beg." Press G END to send it away. When you see "beg" displayed, any calculation you perform using the financial keys is done assuming each payment is due at the beginning of the corresponding payment period. When you don't see "beg" displayed, the payment is due at the end of the payment period.

To Calculate a Balloon Payment on a Mortgage:

A $75,000 mortgage has payments (in arrears) that would totally amortize the loan in 30 years at 13% APR, but the terms of the contract call for a total pay-off in the form of a balloon payment in 10 years. What is the monthly payment, and what is the balloon payment?

Strategy

A balloon payment is the Future Value. To get the balloon payment, calculate FV and add the PMT amount to it.

Mouse	Keyboard	Explanation
G END	F8 keypad 8	Payments are in arrears.
30 G n	30 F8 Q	(30 x 12) periods in the term.
13 G i	13 F8 W	APR converted to monthly rate.
75,000 CHS PV	75,000] E	Amount financed (negative to you).
0 FV	0 T	Loan is paid off at the end.
PMT	R	Result: $829.65 payment.
10 G n	10 F8 Q	Change the term to play "What if?"
FV	T	Result: $70,814.85 remaining balance after the 120th payment.
RCL PMT +	M R +	Recall the PMT and add to this balance. Result: $71,644.50 total balloon payment.

To Calculate a Discounted Mortgage:

Lenders sometimes want to collect their money early, but a contract may not allow this. As a result, they offer to sell the contract to another lender, and to make the sale attractive, they offer to discount the mortgage (accept a sum that is less than the present value of the payments owed to them under the contract). Discounting a mortgage results in a higher yield for the new lender than the APR of the original contract.

A lender sells a mortgage with 10 remaining monthly (arrears) payments of $550.00. The APR is 14%, but the lender offers to discount it so that the buying lender will yield 16%. What is the contract's price? What would be the new yield if the price were $30,000.00?

Strategy

First, find the present value of all remaining payments on the mortgage, but use 16% as the interest. Then use 30,000 as the present value and compute what interest this would mean.

Mouse	Keyboard	Explanation
G END	F8 keypad 8	Payments are in arrears.

10 G n	10 F8 Q	(10 x 12) periods remaining.
0 FV	0 T	Loan is paid at the end.
550 PMT	550 R	Amount of each level payment.
16 G i	16 F8 W	Specify yield to find price.
PV	E	Result: $-32,833.25 Price yields 16%.
30,000 CHS PV	30,000] E	Now specify price to find yield.
i	W	Result: 1.54 monthly yield.
12 *	12 *	Annualize it: 18.49%

Note: The 14% APR of the original contract is irrelevant to this problem. Its only role was in establishing the amount of the borrower's payment.

To Calculate Prepaid Finance Charges:

Prepaid finance charges (points) are nothing more than the original lender discounting the mortgage to himself. The quoted APR is used to determine the borrower's payments, but the finance charges reduce the price the lender has to pay (make the loan) for the contract. This raises his yield and the true interest rate paid by the borrower.

A lender charges 1.5% up front to lend $80,000 for 30 years of monthly payments in arrears at 13.5% APR. What is his true yield (and thus the borrower's true rate)?

Strategy

Compute the borrower's payment using the quoted APR. Then discount the loan to the lender by using as the PV what he is really lending (the loan less the finance charges). Solve for i.

Mouse	Keyboard	Explanation
G END	F8 keypad 8	Payments are in arrears.
30 G n	30 F8 Q	(30 x 12) periods in the term.
80,000 CHS PV	80,000] E	Amount financed.
0 FV	0 T	Loan is paid at the end.

13.5 G i	13.5 F8 W	Quoted APR.
PMT	R	Result: $916.33.
80000 Enter	80000 Enter	Borrower's PMT.
1.5 % - CHS PV	1.5 G -] E	Use 78,000 as price of mortgage.
i	W	Result: 1.14 monthly yield.
12 *	12 *	Annualize it: 13.72%

To Calculate Second Mortgages and Wraparounds:

When a piece of property has a second mortgage on it, the borrower makes two payments, often to separate lenders. Computing the total payment involves first computing the two payments separately, then adding them together.

A wraparound mortgage is a second mortgage in which a lender offers to relieve a borrower of his payment obligations on a first mortgage, plus lend him some money in return for a new level of payment. So the borrower has one payment, while the second lender owes the first.

A home owner owes twenty years of monthly payments of $450.00 on his first mortgage. You offer to wrap his mortgage, lending him $15,000 for home improvements and relieving him of his first mortgage in exchange for $650.00 payments for those twenty years. What is the yield on your $15,000 loan? What would the borrower's new payment be to yield you 17%?

Strategy

First, you get $200 monthly for a 20 year loan of $15,000. Find the interest rate. Second, specify a rate of 17% and compute the payment. If this is your net monthly cash flow, it is the difference between what the borrower pays you and the $450 you owe monthly to the first lender, so add $450.00.

Mouse	Keyboard	Explanation
G END	F8 keypad 8	Payments are in arrears.
20 G n	20 F8 Q	(20 x 12) periods in the term.
15,000 CHS PV	15,000] E	Amount you finance.

0 FV	0 T	The loan is paid at the end.
200 PMT	200 R	This is your net monthly cash flow.
i 12 *	W 12 *	Result: 15.22% your annualized yield.
17 G i	17 F8 W	Now specify your desired yield.
PMT	R	Result: $220.02 your monthly net.
450 +	450 +	Result: $670.02 borrower's payment.

To Calculate Variable Rate Mortgages:

In a variable rate mortgage, the first series of payments are compounded using one APR and the full term of the loan. Then the next series of payments are computed using the remaining balance and the remaining term, and so on.

A $70,000 mortgage on a 30-year term calls for monthly payments in arrears, based on a 12% APR for the first year, and a 13% APR for years two through five, and a 15% APR thereafter. Compute the payments for each of the three periods.

Strategy

Treat each period as a separate problem. The remaining balance and term from the previous period become the term and amount financed for the next.

Mouse	Keyboard	Explanation
G END	F8 keypad 8	Payments are in arrears.
30 G n	30 F8 Q	(30 x 12) periods in the term.
70,000 CHS PV	70,000] E	Loan amount to start.
0 FV	0 T	The loan is paid off at the end.
12 G i	12 F8 W	APR for the first year.
PMT	R	Result: $720.03 first year payment.
1 G n FV	1 F8 Q T	Remaining balance after first year.
CHS PV	] E	This becomes the loan for the second period.

29 G n	29 F8 Q	The term of the second period loan.
13 G i	13 F8 W	APR of second period loan.
0 FV PMT	0 T R	Result: $773.78 PMT for years 2-5.
4 G n FV	4 F8 Q T	Remaining balance after years 2-5.
CHS PV	] E	This becomes loan for third period.
25 G n	25 F8 Q	Term of third period loan.
15 G i	15 F8 W	APR of third period loan
0 FV PMT	0 T R	Result: $878.75 PMT for years 6-30.

To Calculate an Amortization Schedule (AMORT):

Both the lender and borrower on a mortgage often want to know the amount of each level of payment that applies toward interest, how much to reduce the principal, and the remaining balance at that time. This is called the amortization schedule.

Each payment normally covers the entire interest for that period plus some of the principal. As time goes on, less funds are needed to cover the interest on the shrinking debt. Then the principal payment accelerates.

A 30-year, $50,000 mortgage at 14% APR has monthly payments in arrears. What are the amounts paid to interest and principal in the first year? From years two to five? What are the remaining balances at those times?

Strategy

All these questions are answered with the AMORT key. First, however, compute the PMT with a simple 5 key solution. Then use AMORT with the 5 key results still in the financial registers.

Mouse	Keyboard	Explanation
G END	F8 keypad 8	Payments are in arrears.
30 G n	30 F8 Q	(30 x 12) monthly payments.
14 G i	14 F8 W	Enter APR as a monthly rate.
50,000 CHS PV	50,000] E	Amount financed.

0 FV	0 T	Amortized in 30 years.
PMT	R	Result: $592.44 monthly payment.
12 F AMORT	12 F7 Q	Analyze P and I for the first 12 periods. Result: Interest = $6,992.71.
X↔Y	V	Principal = $116.52
RCL PV	M E	Balance after 12th PMT: $-49,883.48.
48 F AMORT	48 F7 Q	Analyze P and I for next 48 periods. Result: Interest = $27,768.85.
X↔Y	V	Principal = $668.08.
RCL PV	M E	Balance after 60th PMT: $-49,215.41.

Using Discounted Cash Flow Analysis (DCF) Keys

The 5 key solutions are good for mortgages and other problems with even payments (or zero payments) every period. But when periodic cash flows are uneven, you need to use the Discounted Cash Flow (DCF) keys to perform the analysis. To do this, describe cash flows in groups. You can have up to 20 groups with up to 99 (identical) cash flows in each group.

You use the DCF keys to perform the following tasks:

- Discounted cash flow analysis
- Calculate net present value
- Calculate internal rate of return
- Calculate yield and rate conversions

To Perform Discounted Cash Flow Analysis:

1. Type in the amount (including the sign) of the initial cash flow group and press G CFo.
2. Type in the number of periods in a row this cash flow occurs and press G Nj. Whenever an occurrence is once, you can skip this step.

3. Type in the amount (including the sign) of the next cash flow group and press G CFj.
4. Type in the number of periods in a row this same cash flow occurs and press G Nj.

   Whenever an occurrence is more than 99 times, you need to break up the oversized group into multiple consecutive groups.
5. Repeat steps 3 and 4 as many times as is necessary to complete the analysis.

Note: Remember the calculator's limits: 20 groups maximum and 99 identical cash flows per group. If there are no cash flows in some periods, use 0 as the cash flow amount. You need to account for every time period of the analysis. Obey the signs of the cash flows.

A $70,000 mortgage on a 30 year term calls for monthly payments in arrears, based on a 12% APR for the first year, a 13% APR for years 2 through 5, and a 15% APR thereafter.

Strategy

To tell the calculator this is a new analysis, use G CFo and G Nj for the initial group. Thereafter, use G CFj and G Nj.

Mouse	Keyboard	Explanation
70,000 CHS G CFo	70,000] F8 E	Amount of cash flow in the first group.
1 G Nj	1 F8 T	This is an optional step which indicates that there is only one cash flow in the group. If for any group you don't use G Nj, the calculator proceeds as if there is only one cash flow.
720.03 G CFj	720.03 F8 R	Next group: amount of each cash flow.
12 G Nj	12 F8 T	Number of cash flows of that amount.
773.78 G CFj	773.78 F8 R	Next group: amount of each cash flow.
48 G Nj	48 F8 T	Number of cash flows of that amount.
878.75 G CFj	878.75 F8 R	Next group: amount of each cash flow.
99 G Nj	99 F8 T	Number of cash flows of that amount. (Maximum number in any group is 99. If you have more than that, use more than one group.)

878.75 G CFj	878.75 F8 R	Next group: amount of each cash flow.
99 G Nj	99 F8 T	Number of cash flows of that amount.
878.75 G CFj	878.75 F8 R	Next group: amount of each cash flow.
99 G Nj	99 F8 T	Number of cash flows of that amount.
878.75 G CFj	878.75 F8 R	Next group: amount of each cash flow.
3 G Nj	3 F8 T	Number of cash flows of that amount. The last four groups have accounted for all 300 of the payments for years 6 through 30 in the loan.

To Calculate Net Present Value (NPV):

What discount should you receive for $70,000 on a variable rate mortgage to yield 17%?

Strategy

Type in the discounted cash flow analysis example. Then type in the desired yield per period and press i. Finally, press F NPV.

Mouse	Keyboard	Explanation
70,000 CHS G CFo	70,000] F8 E	Amount of cash flow in the first group.
1 G Nj	1 F8 T	This is an optional step which indicates that there is only one cash flow in the group. If for any group you don't use G Nj, the calculator proceeds as if there is only one cash flow.
720.03 G CFj	720.03 F8 R	Next group: amount of each cash flow.
12 G Nj	12 F8 T	Number of cash flows of that amount.
773.78 G CFj	773.78 F8 R	Next group: amount of each cash flow.
48 G Nj	48 F8 T	Number of cash flows of that amount.
878.75 G CFj	878.75 F8 R	Next group: amount of each cash flow.

99 G Nj	99 F8 T	Number of cash flows of that amount. (Maximum number in any group is 99. If you have more than that, use more than one group.)
878.75 G CFj	878.75 F8 R	Next group: amount of each cash flow.
99 G Nj	99 F8 T	Number of cash flows of that amount.
878.75 G CFj	878.75 F8 R	Next group: amount of each cash flow.
99 G Nj	99 F8 T	Number of cash flows of that amount.
878.75 G CFj	878.75 F8 R	Next group: amount of each cash flow.
3 G Nj	3 F8 T	Number of cash flows of that amount. The last four groups have accounted for all 300 of the payments for years 6 through 30 in the loan.
17 G i	17 F8 W	Desired yield in monthly form.
F NPV	F7 E	Result: $-13,175.59.

To Calculate Internal Rate of Return (IRR):

IRR is to the DCF keys what i is the the 5 financial keys - it computes the interest rate. Like i, IRR demands at least one positive and one negative cash flow. Unlike i, IRR is very handy for determining an overall or blended rate yield for uneven payment situation.

Compute the overall blended rate for a variable rate mortgage.

Strategy

Type in the previous example, then use IRR.

Mouse	Keyboard	Explanation
70,000 CHS G CFo	70,000] F8 E	Amount of cash flow in the first group.
1 G Nj	1 F8 T	This is an optional step which indicates that there is only one cash flow in the group. If for any group you don't use G Nj, the calculator proceeds as if there is only one cash flow.
720.03 G CFj	720.03 F8 R	Next group: amount of each cash flow.

12 G Nj	12 F8 T	Number of cash flows of that amount.
773.78 G CFj	773.78 F8 R	Next group: amount of each cash flow.
48 G Nj	48 F8 T	Number of cash flows of that amount.
878.75 G CFj	878.75 F8 R	Next group: amount of each cash flow.
99 G Nj	99 F8 T	Number of cash flows of that amount. (Maximum number in any group is 99. If you have more than that, use more than one group.)
878.75 G CFj	878.75 F8 R	Next group: amount of each cash flow.
99 G Nj	99 F8 T	Number of cash flows of that amount.
878.75 G CFj	878.75 F8 R	Next group: amount of each cash flow.
99 G Nj	99 F8 T	Number of cash flows of that amount.
878.75 G CFj	878.75 F8 R	Next group: amount of each cash flow.
3 G Nj	3 F8 T	Number of cash flows of that amount. The last four groups have accounted for all 300 of the payments for years 6 through 30 in the loan.
F IRR	F7 T	Result: 1.15% per month.
12 *	12 *	Annualize this: 13.81% APR.

To Calculate Yield and Rate Conversions:

When two compounding rates of interest are equivalent, they earn exactly the same number of cents on the dollar in one year. Usually problem arise for one of two reasons:

- Two rates apply to different time periods. For example, is 3% quarterly equivalent to 1% monthly? If not, what is the monthly rate?
- The rates apply to the same time period, but they compound at different intervals. For example, is 12% APR, compounded monthly, equivalent to 12%, compounded daily? If not, then what is the equivalent APR for daily compounding?

To solve problems like these in which you convert from rate A to rate B, always use the same procedure.

Strategy

First, find out what rate A earns per year on a given amount of money. Second, using the result you just arrived at, work backward to find out what rate B produces the same result, but with different compounding periods.

3% quarterly = ___ % monthly?

Mouse	Keyboard	Explanation
4 n	4 Q	4 quarters per year.
3 i	3 W	3% per quarter.
100 CHS PV	100] E	Use $100 as a hypothetical investment.
0 PMT	0 R	No other cash flows; just let interest accrue on the $100.
FV	T	Result: $112.55 balance after one full year of rate A.
12 n	12 Q	Now change the number of periods in the year to 12.
i	W	Find out what monthly rate gives the same FV. Result: 0.99.

Note: You can read the effective yearly rate by looking at the result of the FV calculation: $12.55 was earned on $100 over one year, so the effective rate is $12.55. But this is not the APR (which is 11.88).

12% APR, compounded monthly = ___ % APR, compounded daily?

Mouse	Keyboard	Explanation
12 n	12 Q	12 months per year.
12 Enter 12 / i	12 Enter 12 / W	Input APR after dividing by the number of compounding periods per year.
100 CHS PV	100] E	Use $100 as the hypothetical investment.

0 PMT	0 R	No other cash flows; just let interest accrue on the $100.
FV	T	Result: $112.68 - the balance after one year of rate A.
365 n	365 Q	Now change the number of periods in the year to 365.
i	W	Find out what daily rate gives the same FV. Result: 0.03.
365 *	365 *	The annualized APR: 11.94%

15% APR compounded daily (365-day year) = ___ % APR, compounded daily (360-day year)?

Mouse	Keyboard	Explanation
365 n	365 Q	365 days per year.
15 Enter 365 / i	15 Enter 365 / W	Input APR after dividing by the number of compounding periods per year.
100 CHS PV	100] E	Use $100 as a hypothetical investment.
0 PMT	0 R	No other cash flow.
FV	T	Result: $116.18 - balance after one year of rate A.
360 n	360 Q	Now change the number of periods in that year to 360.
i	W	Find what 360-day rate gives the same FV. Result: 0.04.
360 *	360 *	The annualized APR: 14.99754708%

Select F then 9 (F7 then 9) to see all these digits.

Solving Annuity Problems

An annuity is typically thought of as fixed income produced from interest or dividends on an amount of principal. Sometimes the annuity is limited to the interest only. Sometimes (as in many retirement programs) it is intended that the principal be slowly depleted as well. In either case, the recipient of the annuity is analogous to a mortgage lender; the principal is loaned with the expectation of receiving payments on it.

1. How much do you need to start with in a retirement account on January 1, 2001, so that you can receive $2,500 per month for 20 years, depleting the account at the end of 20 years? The account earns 10% APR.

2. What would the monthly annuity be if you wanted to have $50,000 left after 20 years? The account earns 8%.

Strategy

This is a straightforward 5-key problem. The unknown for the first question is present value (PV) and for the second question, payment (PMT).

Mouse	Keyboard	Explanation
G END	F8 keypad 8	Assume the check comes at month's end.
20 G n	20 F8 Q	(20 x 12) months.
10 G i	10 F8 W	Account earns 10% APR.
2500 PMT	2500 R	The monthly annuity check.
0 FV	0 T	The principal is gone in 20 years.
PV	E	Result: $-259,061.55 - the balance you need as starting principal.
50,000 FV	50,000 T	Now specify some remaining balance.
8 G i	8 F8 W	Change to the lower interest rate.
PMT	R	Result: 2,082.01 Your monthly annuity under this scenario.

Solving IRA and Savings Account Problems

Independent retirement accounts (IRAs) and savings accounts are examples of loans in which the lender holds the account and the borrower manages it. This kind of loan is made in small and often regular amounts and intervals. It is the repayment (withdrawals) that may occur all at once.

Beginning with your end-of-the-month paycheck for January 1988, you save $100 per month in a 6% savings account (compounded monthly). What is the amount in savings on September 1, 1996? If the account were an IRA at 12%, and you wanted the resulting sum to be $20,000, what amount would you need to save each month?

Strategy

This is a straightforward 5-key problem. The unknown for the first question is future value (FV) and for the second question, payment (PMT).

Mouse	Keyboard	Explanation
G END	F8 keypad 8	Payments are made into the account at the end of the month.
104 n	104 Q	104 months from 1/88 to 9/96.
6 G i	6 F8 W	Your interest rate is 6% APR.
100 CHS PMT	100] R	The monthly deposit, which is really a loan you make to the bank.
0 PV	0 E	The account starts at $0.00.
FV	T	Result: $13,596.99, balance on 9/1/96.
20,000 FV	20,000 T	Specify the remaining amount.
12 G i	12 F8 W	Change to the IRA interest rate.
PMT	R	Result: $110.21, the required monthly IRA contribution.

Computing Bonds

A bond is a written promise to pay a specified sum to the bearer of that piece of paper on a specified date (maturity date), plus interest payments at regular (coupon) intervals in the meantime. The piece of paper may be sold at any time at any price agreeable to both parties.

The Financial Calculator has keys that calculate a bond's price (for a desired Yield-To-Maturity) or its YTM, given the price of the bond.

You can use the PRICE and YTM keys only for the following situations:

- The sum due upon maturity (par) is $100.
- The coupon period is 6 months (semi-annual coupon). So the coupon rate quoted (which is annualized) is actually twice what the interest payment is for each period.
- The calendar used is a 365-day year.
- When computing a selling price for a date within some coupon period, the calculator computes the interest that is rightly the seller's for the portion of the period the bond is held.

To compute bonds or find the number of days between dates, you'll need to type in a calendar date in one of two formats: Month.DayYear (M.DY) or Day.MonthYear (D.MY).

When you see d.my in the display, then any calendar date you type in should be in Day.MonthYear format. When you don't see this annunciator, all dates should be in Month.DayYear format.

To Calculate Price and Yield-To-Maturity (YTM):

A bond maturing on October 24, 1991 at a par of 100 is being offered on March 19, 1987 for 75 plus the odd-days' interest due the seller. The bond carries an 8% coupon rate, paid semi-annually on an actual 365-day basis. What is your Yield-To-Maturity if you buy this bond? What price (and what interest) would you pay to get a YTM of 12%. This is the only kind of bond to which the Financial Calculator's PRICE and YTM keys are applicable.

Strategy

Use the PRICE and YTM keys.

Mouse	Keyboard	Explanation
G M.DY	F8 keypad 5	Sets the Financial Calculator to accept dates in this format.
75 PV	75 E	Price paid, excluding interest.
8 PMT	8 R	Coupon rate.
3.191987 Enter	3.191987 Enter	Purchase date.

10.241991	10.241991	Maturity date.
F YTM	F7 S	Result: 15.85% APR.
12i	12 W	Now play "What if?" by specifying a 12% APR yield.
3.191987 Enter	3.191987 Enter	Purchase date.
10.241991	10.241991	Maturity date.
F PRICE	F7 A	Result: 86.14 purchase price.
X↔Y	V	Result: 3.18 seller's interest.

Remember you adjust the number of decimal places you see by pressing F and the number.

Note: Don't use as maturity dates the last day of March, May, October, or December, or the last three days of August; move the whole analysis forward, if possible.

Computing Depreciation

The Financial Calculator offers three methods for depreciation (slowly writing off an asset as an expense): straight-line, declining balance, and sum-of-the-year's digits (SOYD), but not ACRS.

You're buying a computer system for $500,000.00. You estimate its serviceable life to be 10 years, with a salvage value of $1000,000.00. Compare three methods of depreciation by computing the depreciation of year 5, using straight-line, 150% declining balance, and SOYD.

Strategy

Use the special keys for depreciation.

Mouse	Keyboard	Explanation
500,000 PV	500,000 E	The present value of the asset.

100,000 FV	100,000 T	The salvage value. You don't need to obey the sign conventions here because this is not a 5-key or NPV problem.
10 n	10 Q	The depreciable life.
150 i	150 W	The declining balance factor (used only in the DB calculation).
5 F SL	5 F7 D	Result: 40,000.00 (year 5 SL depreciation).
X↔Y	V	Result: 200,000.00 (remaining value).
5 F DB	5 F7 G	Result: 39,150.47 (year 5 DB value).
X↔Y	V	Result: 121,852.66 (remaining value).
5 F SOYD	5 F7 F	Result: 43,636.36 (year 5 SOYD depreciation).
X↔Y	V	Result: 109,090.91 (remaining value).

Computing Appreciation

If you invest in a piece of property in a healthy economy, the salable value of that property rises over time. You can then compute the per year (compounding) value of that property and compare it to other interest-bearing investments.

You buy a house today for $150,000. In five years, you think you can sell it for $250,000. What is the yearly appreciation rate? If the rate were 12%, what would the sale price be?

Strategy

This problem has level cash flows, evenly spaced, with a single investment at the beginning and a single return at the end. Use a 5-key solution. BEG vs END is immaterial, because PMT is zero.

Mouse	Keyboard	Explanation
150,000 CHS PV	150,000] E	The present value of the house to you, the investor.
250,000FV	250,000 T	The future value of the house to you, the seller.

5 n	5 Q	The time period involved.
0 PMT	0 R	No other cash flows.
i	W	Result: 10.76% yearly appreciation.
12 i	12 W	Play "What if?" by changing the rate to 12% and solve for the resulting sales value.
FV	T	Result: $264,351.25.

Calculating Statistics

You can use the Financial Calculator to perform the following statistical analyses:

- Calculate the mean (average)
- Calculate linear projections
- Calculate a weighted mean

When you want to accumulate a set of data points for statistical analysis, use the Σ+ key. To use the Σ + key, perform the following:

1. Enter your data points in the X register
   You can use the Y register also if you have a problem that demands analysis of more than one variable.
2. Press the Σ+ key
   The Σ+ key is the & key on your keyboard.

The US federal budget deficits (in billions of dollars) for fiscal years 1976-1985 were the following:

1976	66.4	1981	57.9
1977	44.9	1982	110.6
1978	48.8	1983	207.8
1979	27.7	1984	195.4
1980	59.6	1985	211.9

What was the average deficit for the first five years of this period? The second five years?

Strategy

Accumulate the data for the first five years in the X register and the second five years in the Y register. Then solve for the mean. The answer will be given in both X and Y registers.

Mouse	Keyboard	Display	Explanation
F Clear	F7 B	0.00	To clear registers 1-6 and the stack.
57.9 Enter	57.9 Enter		First pair of data points.
66.4 Σ+	66.4 &	1.00	For fiscal years 1981 and 1976.
110.6 Enter	110.6 Enter		Second pair of data points.
44.9 Σ+	44.9 &	2.00	For fiscal years 1982 and 1977.
207.8 Enter	207.8 Enter		Third pair of data points.
48.8 Σ+	48.8 &	3.00	For fiscal years 1983 and 1978.
195.4 Enter	195.4 Enter		Fourth pair of data points.
27.7 Σ+	27.7 &	4.00	For fiscal years 1984 and 1979.
211.9 Enter	211.9 Enter		Fifth pair of data points.
59.6 Σ+	59.6 &	5.00	For fiscal years 1985 and 1980.

Note: If you make a mistake at any entry and reproduce your mistake, press Σ- (F8 &) to undo the mistake.

To Calculate the Mean (Average):

To find the averages of your two sets of data from the previous problem, perform the following operation:

Mouse	Keyboard	Explanation
Gx	F8 keypad 0	Result: 49.5 This is the X average, the yearly deficit from 1976-1980.
X↔Y	V	Result: 156.7 This is the Y average yearly deficit 1981-1985.

To Calculate Linear Projection:

After two sets of data are typed in, you can use the pace of one set to project the other into the future.

If each of the above deficit paces had been continued, then in the time it would have taken the 1976-1980 pace (which was decreasing) to reach $0 (a balanced budget), what would the deficit have reached using the 1981-1985 pace (which was increasing)?

Mouse	Keyboard	Explanation
0 Gy,r	0 F8 keypad 2	**Project y by naming an x value.** Result: 256.3 billion.

To Calculate a Weighted Mean:

To calculate a weighted mean, use the same procedure as for a normal mean, except use the weighting factor (your yield percentages, for example) as your Y set and your raw amount (your amounts invested, for example) as your X set. When all data is accumulated, use the following keystrokes:

Mouse	Keyboard	Explanation
Gxw	F8 keypad 6	Result: your weighted yield (for example).

Acknowledgement

This chapter was excerpted and summarized from a booklet entitled "The HP-12C Pocket Guide: Just in Case" published by Grapevine Publications and used with their permission.

Grapevine also publishes another book on how to use the HP-12C calculator entitled "An Easy Course In Using the HP-12C." The Easy Course includes instructions for programming the HP-12C which is not possible with PC Tools Desktop's Financial Calculator.

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The two publications listed below give more extensive information on how to use the HP-12C calculator. Their publisher, Grapevine Publications, is in no way affiliated with Central Point Software, Inc.

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Quantity	Publication	Price	Total
____	The HP-12C Pocket Guide: Just in Case	$ 4.95	____
_____	An Easy Course in Using The HP-12C	$19.95	____
	Shipping and Handling Charge		$2.00
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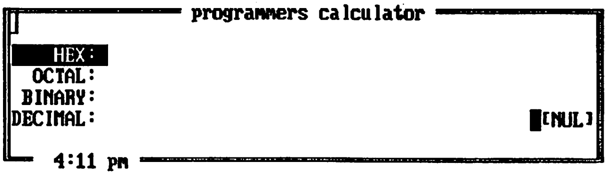
Using the Programmer's Calculator

PC Tools Desktop supplies a calculator for programmers to enable you to calculate in decimal, binary, octal or hexadecimal and displays the ASCII characters and IBM graphics characters. The result is displayed in all four number bases. The Programmer's Calculator is a 32 bit calculator and can perform simple operations but does not calculate fractions.

To use the Programmer's Calculator, perform the following steps:

1. Choose **Programmer's (hex) calculator** from the Calculators menu. The Programmer's Calculator is displayed.



2. Use the up and down arrow keys to select the following number bases:

   Hex: Calculates in hexadecimal.
   Octal: Calculates in octal.
   Binary: Calculates in binary.
   Decimal: Calculates in decimal.

3. Use the keypad or top row of number keys to type a number in your choice of number base.

4. Press Enter. The values of all the other number bases are displayed.

Note: After you have displayed the number values, pressing the arrow keys again (changing bases) erases the numbers.

To Perform Algebraic Calculations:

You can also use the Programmer's Calculator to perform addition, subtraction, multiplication, and division.

1. Use the up and down arrow keys to select the number bases:

2. Use the keypad or top row of number keys to type a number in your choice of number base.
3. Press Enter.
   The values of all the other number bases are displayed.
4. Select the operation (+, *, /. or -) key and type the number value.
5. Press Enter.
   The operation is performed and the values of the other number bases are displayed. You can repeat steps 4 and 5 to perform other operations.

To Clear the Calculator:

- Press Enter or backspace.

Using the Scientific Calculator

The PC Tools Desktop Scientific Calculator emulates many of the functions of the HP-11C Calculator; it does not, however, include its programming capability. If you are familiar with using the HP-11C, you will find that performing the same functions with the PC Tools Desktop version is easy. If you do not know how to use an HP-11C Calculator, this section is designed to familiarize you with its use.

This section is not intended as a comprehensive demonstration of the HP-11C calculator. If you want a more complete explanation of how to use the HP-11C, there are manuals available at most bookstores.

Central Point Software, Inc. does not guarantee that the keystroke sequences and the results given are correct or suitable for your purposes. You are responsible for decisions you make when using the Scientific Calculator.

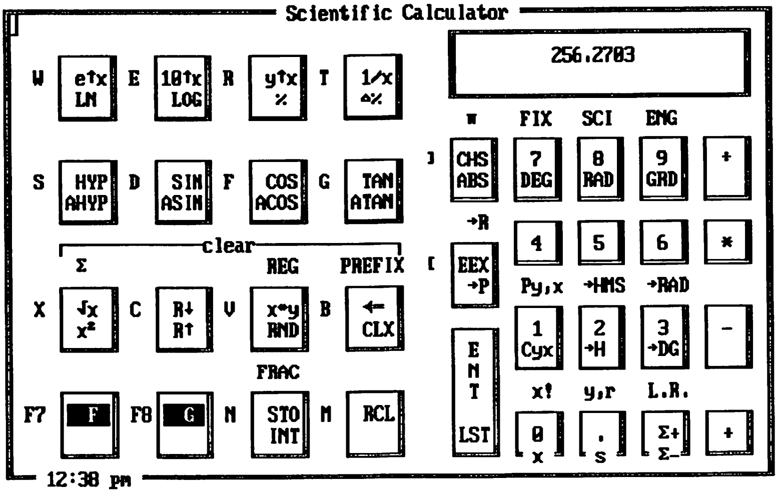
The Scientific Calculator operates by using "Reverse Polish Notation," which differs from the "Infix Notation" most calculators use. To perform calculations, you need to enter the number for the calculation first, and then enter the operator for the calculation. Your answer appears in the display after you press the function key. As you enter numbers, they go into memory into what's called a stack--the last number entered becomes the bottom entry of the stack. When the operation is performed (by pressing the function key), the operator acts upon one or more of the bottom entries in their order of entry and puts the result on the stack for the next calculation. The following example shows the different keystrokes used for Reverse Polish Notation and Infix Notation in entering numbers and functions for this problem:

(6 + 12 + 3 - 9) * 3

Reverse Polish Notation keystrokes	Infix Notation keystrokes
6	6
Enter	+
12	12
+	+
3	3
+	-
9	9
-	*
3	3
*	=
36 (result)	36 (result)

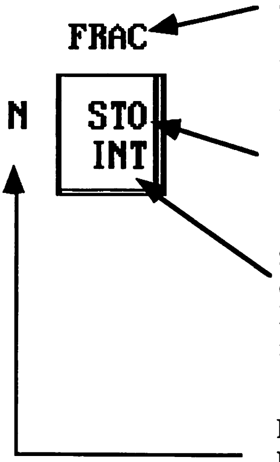
Understanding the Display

When you choose **Scientific Calculator** from the Calculators menu, an emulation of the HP-11C is displayed:



Using the Keys

Most "keys" on the Scientific Calculator perform more than one function. The main function is indicated by the character in the center of the key on the screen while the secondary functions are above the key (in red on color monitors) and below the main function key (in blue on color monitors). These colors can be changed from the Window menu. The letters to the left of the keys on the screen indicate the function's keyboard equivalent.



Secondary function at the top of the key
(these functions appear in red on a color monitor)
First select the F prefix key, then the function key;
for example, F FRAC.

Primary function on the displayed "key"
Select only that key, for example, STO.

Secondary function located on the lower part of
each key (displayed in blue on color monitors)
First select the G prefix key, then the function key,
for example, G INT.

Keyboard equivalent for a function key.
For example, press N to use STO.

Note: Select and release the F or G prefix key *before* the next key.

The "Keys" and their Functions

"Key"	Function
e↑x	Raises *e* to the power of the number in the display.
G LN	Computes the natural logarithm of the number in the display.
10↑x	Raises 10 to the power of the number in the display.
G LOG	Computes the common logarithm (base 10) of the number in the display.
y↑x	Raises the number in the Y register to the power of the number in the display.
G %	Computes X% of the value in the Y register.
1/x	Computes the reciprocal of the number in the display.
G Δ%	Percent difference. Computes the percent of change between the number in the Y register and the number in the displayed X register.
F π	Places the value of pi (3.141592654) in the display.
CHS	Changes the sign of the number or the exponent of 10 in the display.
G ABS	Gives the absolute value of the number in the display.
F FIX	Sets the number of decimal places in the display. The default is set to 4 places; all examples in the manual assume F FIX 4.
G DEG	Sets the display mode to degrees for trigonometric functions as indicated by the absence of the GRAD or RAD annunciator.
F SCI	Sets the display mode to scientific notation.
G RAD	Sets the display mode to radians for trigonometric functions as indicated by the RAD annunciator.

F ENG	Sets the display mode to engineering notation.
G GRD	Sets the display mode to grads for trigonometric functions as indicated by the GRAD annunciator.
HYP	Computes the hyperbolic sine, hyperbolic cosine, or hyperbolic tangent, using SIN, COS, and TAN, respectively, of the number in the display.
G AHYP	Computes the inverse hyperbolic sine, inverse hyperbolic cosine, or inverse hyperbolic tangent, using SIN, COS, and TAN, respectively, of the number in the display.
SIN	Computes the sine of the number displayed in the X register.
G ASIN	Computes the arc sine of the number in the display.
COS	Computes the cosine of the number displayed in the X register.
G ACOS	Computes the arc cosine of the number in the display.
TAN	Computes the tangent of the number displayed in the X register.
G ATAN	Computes the arc tangent of the number in the display.
F ->R	Converts the polar magnitude in the X and Y registers respectively to rectangular X and Y coordinates.
EEX	Enter Exponent; the next digits keyed in are exponents of 10.
G ->P	Converts X, Y rectangular coordinates placed in X and Y registers respectively to polar magnitude.
F Σ	Clears the contents of the statistics registers (R0-R5) and the stack registers, but not the LAST X register.
$\sqrt{X}$	Computes the square root of the number in the display.
G X^2	Computes the square of the number in the display.
R↓	Rolls down the contents of the stack.
G R↑	Rolls up the contents of the stack.
F REG	Clears the contents of all storage registers to zero.
X↔Y	Exchanges the contents of the X and Y stack registers.
G RND	Rounds the mantissa of a 10 digit number in the X register to match the display setting.
F PREFIX	Cancels the F and G prefixes and partially entered instructions such as F SCI or G HYP.
<--	Deletes numbers from displayed X register.
G CLX	Clears the contents of the displayed X register to zero.
ENT	Enters a copy of a number in the displayed X register into the Y register; it is also used to separate multiple number entries.
G LST	Recalls the number displayed before the previous function back into the displayed X register.
F Py,x	Permutation. Computes the number of possible ordered choices of y different items taken in quantities of x items at a time without repetitions.
G Cyx	Combination. Computes the number of possible sets of *y* different items taken in quantities of *x* items at a time without repetitions or order.

F ->HMS	Converts decimal hours—or degrees—to hours, minutes, seconds--or degrees, minutes, seconds.
G ->H	Converts hours, minutes, seconds (or degrees, minutes, seconds) to decimal hours (or degrees).
F ->RAD	Converts degrees to radians.
G ->DG	Converts radians to degrees.
F	Selected before a function key, preforms the functions above the key. The "f" annunciator also appears in the display.
G	Selected before a function key, performs the functions below the key. The "g" annunciator also appears in the display.
F FRAC	Extracts the digits after the decimal and places them in the display.
STO	Stores from 1 to 10 numbers in the 0 to 9 and .0 to .9 place holders.
G INT	Extracts the digits before the decimal point and places them in the display.
RCL	Recalls the stored number(s). Select this key and follow it with the storage register number.
F x!	Calculates factorial x! or Gamma function Γ.
G x	Calculates the mean (average) of the x and y values collected using Σ+.
F y,r	Calculates linear estimate and correlation coefficient.
G s	Calculates the sample standard deviations of the x and y values collected using Σ+.
F L.R.	Calculates linear regression.
Σ+	Collects statistics of numbers from the X and Y registers into the statistics storage registers (R0-R5).
G Σ-	Subtracts statistics of numbers in the X and Y registers from the statistics storage registers (R0-R5) to correct statistics collection.

How to Use the Following Examples:

If you are using a mouse, the first column in each table shows you which key on the display to click. If you are using the keyboard, the second column shows you which keys you need to press. These keys are located to the left of the display keys. You need to enter any numbers in the table using the numeric keypad or number keys on your keyboard or you can click on the keys with the mouse. The third column shows the number appearing in the display. All of the examples in the manual assume F FIX 4.

Clearing the Display

The Scientific Calculator clears digits from the registers and display two ways: with the CLX (clear X) and <-- (back arrow) keys. G CLX clears any numbers in the display to zero. The <-- key operates in the following two ways:

- If you select <-- after a function, all digits in the display are cleared to zero.

Mouse	Keystrokes	Display
1578	1578	1578
1/x	T	0.0006
<--	B or back arrow	0.0000

- After you have typed a new number, if you select <-- before performing a function, the last digit you keyed in is deleted. Deleting one or more digits then enables you to key in new digits to replace them.

Mouse	Keystrokes	Display
1578	1578	1578
<--	B or back arrow	157
<--	B or back arrow	15
9	9	159

Clearing the Prefixes

If you want to cancel a prefix for a function (for example, if you make a mistake), use F clear PREFIX to cancel the error. Clear PREFIX also cancels the STO, RCL, HYP, and AHYP functions.

One-Number Operations

A one-number operation is any numerical operation that uses just one number. To perform one-number operations:

1. Enter the number if it is not already in the display.
2. Select the operator key.

Mouse	Keystrokes	Display
64	64	64
√x	X	8.0000

Two-Number Operations

To execute a two-number operation, you need to have entered two numbers in the calculator before performing the operation. The +, -, *, and ÷ are examples of two-number operations. The + key adds the last entry to the value stored in the calculator, and the - key subtracts the last entry; the * key multiplies what's in the calculator by the last entry, and the ÷ key divides by the last entry. But first, you have to enter the numbers into the calculator. You do not need to use the Enter key if the first number of the two-number operation is already in the calculator (as the result of a previous operation). If you have to type in two numbers before performing an operation, use the Enter key to separate the two numbers.

Order of Entry

Reversing the order of the numbers in addition and multiplication will not have any effect on your answer, but the number you are subtracting or dividing by must always be the second number entered.

To Perform	Keystrokes or Mouse	Display
5 ÷ 4	5 Enter 4 / or ÷	1.2500
4 ÷ 5	4 Enter 5 / or ÷	.8000
5 - 4	5 Enter 4 -	1.000
4 - 5	4 Enter 5 -	-1.000

When using two-number operations (such as y↑x), the number designated by x is the last number to be entered. For example, to calculate the value of 2 raised to the power of four (2^4), type 2, select Enter , type the exponent, 4, then select y↑x .

Mouse	Keystrokes	Display
2	2	2
ENT	Enter	2.000
4	4	4
y↑x	R	16.000

To solve (6 + 12 +3 - 9) * 3:

Mouse	Keystrokes	Display	
6	6	6	
ENT	Enter	6.0000	
12	12	12	
+	+	18.0000	(6 + 12)
3	3	3	
+	+	21.0000	(6 + 12 + 3)
9	9	9	
-	-	12.0000	(6 + 12 + 3 - 9)
3	3	3	
*	*	36.0000	(6 + 12 +3 - 9) * 3

To solve (10 + 2) ÷ (9 - 3), first solve for the intermediate result of (10 + 2):

Mouse	Keystrokes	Display	
10	10	10	
ENT	Enter	10.0000	
2	2	2	
+	+	12.0000	(10 + 2)

Now calculate (9 - 3). Next, solve the second equation and remember to select Enter to separate the two numbers.

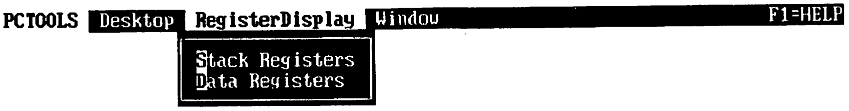
Mouse	Keystrokes	Display	
9	9	9	
ENT	Enter	9.0000	
3	3	3	
-	-	6.0000	(9 - 3)

Then divide the intermediate results (12 and 6) for the final answer:

Mouse	Keystrokes	Display	
÷	/	2.0000	(10 + 2) ÷ (9 - 3)

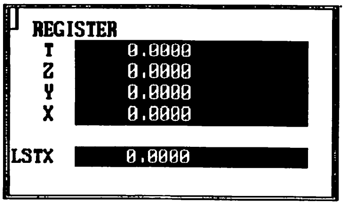
Understanding the Registers

The Scientific Calculator uses different types of registers to manipulate and store the results of calculations. To view the contents of any of the registers, choose the appropriate kind of register from the Register Display menu shown below.



Stack Registers

The memory stack registers, along with the Enter key, store and recall intermediate results for your calculations.



```
REGISTER
   T        0.0000
   Z        0.0000
   Y        0.0000
   X        0.0000

LSTX        0.0000
```

When using the Scientific Calculator, the number in the display is the same number in the X register. Typing in a number or executing an operation causes the numbers already in the stack to move up one register, remain in the same register, or drop, depending upon the type of operation you are performing. Numbers in the stack are available on a last in, first out basis.

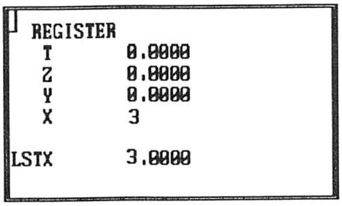
R↓ and R↑ roll the contents of the stack registers down or up one register. No values are lost. X↔Y exchanges the numbers in the X and Y registers.

LAST X Register - LSTX

When an operation is performed, a copy of the number in the X register before the operation was performed is also stored in the LAST X register. Selecting G LST places a copy of the contents of the LAST X register into the X register. This feature saves you from having to re-enter numbers you want to use again and can assist you in error recovery. The following illustration demonstrates how the LAST X register works with the operation 3^2:

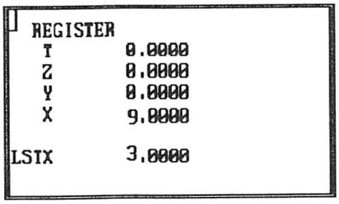
Keys

3



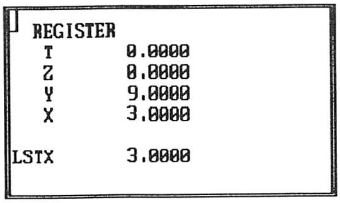
```
REGISTER
 T          0.0000
 Z          0.0000
 Y          0.0000
 X          3

LSTX        3.0000
```

G x^2



```
REGISTER
 T          0.0000
 Z          0.0000
 Y          0.0000
 X          9.0000

LSTX        3.0000
```

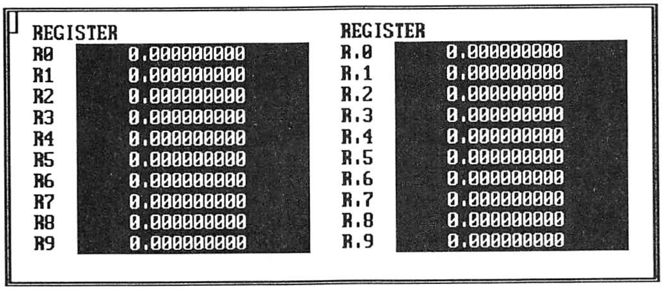
G LST



```
REGISTER
 T          0.0000
 Z          0.0000
 Y          9.0000
 X          3.0000

LSTX        3.0000
```

Data Registers

Storing and recalling numbers involve the displayed X register and the data storage registers.



```
REGISTER                            REGISTER
R0         0.000000000              R.0        0.000000000
R1         0.000000000              R.1        0.000000000
R2         0.000000000              R.2        0.000000000
R3         0.000000000              R.3        0.000000000
R4         0.000000000              R.4        0.000000000
R5         0.000000000              R.5        0.000000000
R6         0.000000000              R.6        0.000000000
R7         0.000000000              R.7        0.000000000
R8         0.000000000              R.8        0.000000000
R9         0.000000000              R.9        0.000000000
```

Storing and Recalling Numbers - STO and RCL

Using the Scientific Calculator, numbers can be stored in memory for later use with the STO (store) and RCL (recall) keys. The STO key copies the number in the displayed X register and places it in the specified storage place holder. Select the

STO key and then press a numeral key (or click on it with the mouse) to place the number from the display into the specified place holder. You can place up to 20 numbers in memory by entering them in the 0 to 9 and .0 to .9 place holders. You can view the storage registers to see which place holder the stored number is in by choosing D from the Register Display menu or pressing F6. Selecting the RCL key then pressing the specified place holder numeral brings back the stored value to use even when other calculations have been performed in the interim.

Example

The following keys, STO, RCL, + , -, *, ÷, use the number in the X register to perform arithmetic upon the contents of a specified storage register *n*. The key sequence is STO followed by an arithmetic function key, followed in turn by the register address (0 through 9 and .0 through .9). The result of any storage register operation is placed in the specified data storage register.

Mouse	Keystrokes	Display	
6 STO 1	6 N 1	6.0000	Stores 6 in R1.
2 STO ÷ 1	2 N / 1	2.0000	Divides number in R1 (6) by 2.
RCL 1	M 1	3.0000	Recalls copy of new number in R1.
4 STO * 1	4 N * 1	4.0000	Multiplies number in R1 (6) by 4.
RCL 1	M 1	12.0000	Recalls copy of new number in R1.
STO + 1	N + 1	12.0000	Adds 12 to number in R1.
RCL 1	M 1	24.0000	Recalls copy of new number in R1.
8 STO - 1	8 N - 1	8.0000	Subtracts 8 from number in R1.
RCL 1	M 1	16.0000	Recalls copy of new number in R1.

Clearing the Storage Registers - F REG

A copy of the stored number remains in the storage register until a new number is stored there or until the storage registers are cleared. Selecting F REG (keystrokes F7-V) clears the contents of all storage registers to zero. It also clears the statistics registers (R1-R5). To clear a single storage register, store zero in that register.

Clearing the Stack Registers - F Σ

To make sure that no values from previous calculations remain in the stack registers, select F clear Σ (that's F7-X on the keyboard) to clear the Stack Registers before beginning the new operation. F Σ clears the stack registers, but not the LAST X register.

Controlling the Display Mode

The Scientific Calculator has three modes for displaying digits: fixed, FIX; scientific, SCI; and engineering, ENG . These modes use a variable (0 through 9) to specify the display setting.

Fixed Mode - F FIX

The FIX key enables you to specify the number of digits after the decimal point. The Scientific Calculator initially displays 4 decimal places; however, internally, each number is represented as a 10-digit mantissa and a two-digit exponent of 10. You can set the number of places after the decimal point by selecting the F key, then the FIX key, and then pressing a numeral key (or clicking on it with the mouse). The designation of decimal places is retained even when you turn off the computer. For example, selecting F FIX 2 would display the number 456,789 as 456,789.00.

Scientific Mode - F SCI

SCI displays a number in scientific notation. To select or change SCI mode, select F SCI and then the number key specifying the number of decimal places you want the display rounded to, from 0 to 6. For example, selecting F SCI 4 would display 456,789 as 4.5679 05.

Engineering Mode - F ENG

ENG displays numbers in engineering notation format, which is similar to scientific notation with the following exceptions:

- Exponents are displayed in multiples of three. Thus any display can be easily read in units of K (kilo-10^3) or m (milli-10^{-3}) that are frequently used in the engineering field.
- The next digit after the specified number of decimal places is automatically rounded off.

The number following F ENG specifies the number of digits to display following the first significant digit. The following example demonstrates this:

Mouse	Keystrokes	Display	
456789	456789	456789	
F ENG	F7 9	456789	
1	1	460. 03	Rounded to one significant digit.
F ENG	F7 9	460. 03	
3	3	456.8 03	Rounded to third significant digit.
F ENG	F7 9	456.8 03	
5	5	456.789 03	

Entering Exponents - EEX

The EEX (enter exponent) function is used to enter the exponent of a number. To use EEX, first type the mantissa, then select EEX, then type in the exponent. For example, to type in 1.2345 X 10^{67}, do the following:

Mouse	Keystrokes	Display	
1.2345	1.2345	1.2345	
EEX	[	1.2345 00	The 00 prompts you to key in the exponent.
67	67	1.2345 67	(1.2345 X 10^{67})

Changing Numbers

Absolute Value - G ABS

Selecting G ABS changes the number in the display to the absolute value of the number.

Mouse	Keystrokes	Display
45678	45678	45678
CHS	]	-45678
G ABS	F8]	4,5678.0000

Rounding Numbers - G RND

Selecting G RND rounds the Scientific Calculator's internal 10-digit mantissa of the value in the display to the specified number of digits you selected with the FIX, SCI, or ENG setting.

Mouse	Keystrokes	Display	
789.66666	789.6666	789.6666	
G RND	F8 V	789.6667	(assumes FIX 4 display setting)

Changing the Sign of a Number - CHS

Selecting CHS will change the sign in front of a number to the opposite sign. Positive is the default; if the number is changed to negative, a minus (-) will appear in the display.

Integer - G INT

Selecting G INT extracts the digits before the decimal point from the number in the display and places them in the display.

Mouse	Keystrokes	Display	
789.6666	789.6666	789.6666	
G INT	F8 N	789.0000	(assumes FIX 4 display setting)

Fractional Part - F FRAC

Selecting F FRAC extracts the digits after the decimal point from the number in the display and places them in the display.

Mouse	Keystrokes	Display	
789.6666	789.6666	789.6666	
F FRAC	F7 N	0.6666	(assumes FIX 4 display setting)

One-Number Operations

Pi - F π

Selecting F π places the value of pi (3.141592654) in the display (assuming you've set the F FIX setting to 9).

Reciprocal or Inverse - 1/x

Selecting 1/x displays the reciprocal of the number in the display.

Mouse	Keystrokes	Display
3	3	3
1/x	T	0.3333

Square - G X^2

Selecting G X^2 calculates the square of the displayed number. To calculate 11.8 squared, do the following:

Mouse	Keystrokes	Display
11.8	11.8	11.8
G X^2	F8 X	139.2400

Square Root - √x

Selecting √x calculates the square root of the displayed number. To calculate the square root of 64, do the following:

Mouse	Keystrokes	Display
64	64	64
√x	X	8.0000

Factorial - F x!

Selecting F x! calculates the factorial of the number in the display. To calculate 5 factorial (5 * 4 * 3 * 2 * 1), do the following:

Mouse	Keystrokes	Display
5	5	5
F x!	F7 0	120.0000

Gamma - F x!

To calculate the Gamma function of a number, subtract 1 from the number. Then, with the result in the X register, select x!.

Mouse	Keystrokes	Display
1.5	1.5	1.5
ENT	Enter	1.5000
1	1	1
-	-	.5000
F x!	F7 0	.8862

Performing Logarithmic Functions

Common Logarithm - G LOG

Selecting G LOG calculates the common logarithm (base 10) of the displayed number. The number must be positive.

Mouse	Keystrokes	Display
5	5	5
G LOG	F8 E	0.6990

Common Antilogarithm - 10↑X

Selecting 10↑x calculates the common antilogarithm of the number in the display; it raises 10 to the power of that number. Therefore, $10^{1.2345}$ is calculated

Mouse	Keystrokes	Display
1.2345	1.2345	1.2345
10↑x	E	17.1593

Natural Logarithm - G LN

Selecting G LN calculates the natural logarithm of the number in the display: the logarithm to the base *e*.

Mouse	Keystrokes	Display
10	10	10
G LN	F8 W	2.3026

Natural Antilogarithm - *e*↑x

Selecting *e*↑x calculates the natural antilogarithm of the number in the display; $e^{1.2345}$ is the following:

Mouse	Keystrokes	Display
1.2345	1.2345	1.2345
e↑x	W	3.4367

Performing Trigonometric Functions

You can work with trigonometric functions using one of three types of angle units: degrees, radians, or grads. Selecting a mode tells the calculator what unit of measure to use; it does not convert a number already in the calculator.

Selecting G DEG selects the degree mode. Selecting G RAD puts the calculator in radian mode, and "rad" appears in the display. Selecting G GRAD puts the calculator in gradians mode, and "grad" appears in the display.

The following table shows the available trig functions and keys to select.

Mouse	Keystrokes	Function
SIN	D	Sine
COS	F	Cosine
TAN	G	Tangent
G ASIN	F8 D	Arc sine
G ACOS	F8 F	Arc cosine
G ATAN	F8 G	Arc tangent

Performing Hyperbolic Functions

Hyperbolic calculations are performed with the trigonometric keys preceded by the HYP key for hyperbolic calculations or the AHYP key for inverse hyperbolic calculations.

Mouse	Keystrokes	Functions
HYP SIN	S D	Hyperbolic sine (sinh)
HYP COS	S F	Hyperbolic cosine (cosh)
HYP TAN	S G	Hyperbolic tangent (tanh)
G AHYP SIN	F8 S D	Inverse hyperbolic sine ($\sinh^{-1}$)
G AHYP COS	F8 S F	Inverse hyperbolic cosine ($\cosh^{-1}$)
G AHYP TAN	F8 S G	Inverse hyperbolic tangent ($\tanh^{-1}$)

Time and Angle Conversions

Hours, Minutes, Seconds Conversion - F ->HMS

Selecting F ->HMS converts the number in the display from a decimal hours (or decimal degrees) format to an hours (or degrees), minutes, seconds, decimal seconds format.

Mouse	Keystrokes	Display
12.345	12.345	12.345
F ->HMS	F7 2	12.2042

Hours, H.h, is converted to H.MMSSs. Degrees, D.d is converted to D.MMSSs.

Decimal Hour Conversion - G ->H

Selecting G ->H converts the number in the display from an hours (or degrees), minutes, seconds, decimal seconds format to a decimal hour (or degrees) format.

Mouse	Keystrokes	Display
12.3456	12.3456	12.3456
G ->H	F8 2	12.5822

Hours, H.MMSSs, is converted to H.h. Degrees, D.MMSSs is converted to D.d.

Degrees/Radians Conversion

Degrees to Radians - F ->RAD

Selecting F ->RAD converts the displayed number from decimal degrees to radians.

Mouse	Keystrokes	Display
67.1	67.1	67.1
F ->RAD	F7 3	1.1711

Radians to Degrees - G ->DG

Selecting G ->DG converts the displayed number from radians to degrees.

Mouse	Keystrokes	Display
1.1711	1.1711	1.1711

G ->DG	F8 3	67.0991 or 67.1

Two-Number Operations

As previously mentioned, the Scientific Calculator uses the values in the displayed X register and the Y register to calculate some results. To use any of the two-number operations, enter the Y register value first, press Enter to lift the value into the Y register, key in the displayed X register value, then execute the operation.

Exponential - y↑x

Selecting y↑x raises the number in the Y register to the power of the number in the displayed X register. Enter the number (Y) that you want to raise to a power, select Enter , then enter the power, and complete the operation by selecting y↑x . Thus, 5^2 is calculated in the following way:

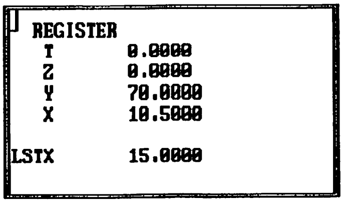
Mouse	Keystrokes	Display
5	5	5
ENT	Enter	5.0000
2	2	2
y↑x	R	25.0000

Percent - G %

Selecting G % calculates what percentage the value in the X register is of the value in the Y register. The following example shows 15% of 70.

Mouse	Keystrokes	Display	
70	70	70	
ENT	Enter	70.0000	
15	15	15	
G %	F8 R	10.5000	(answer 10.5)

The percentage appears in the display, the Y register remains the same, and the percentage rate is placed in LAST X. The stack does not change, so any values held in the Z and T registers before selecting G % will remain. The following illustration shows the stack of the previous problem.



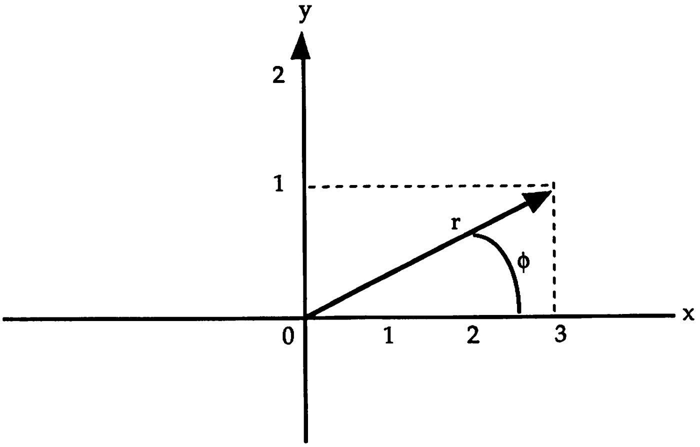
```
REGISTER
 T       0.0000
 Z       0.0000
 Y       70.0000
 X       10.5000

LSTX     15.0000
```

Percent Difference - G Δ%

Selecting G Δ% calculates the percent difference between two numbers. To calculate the percent increase between 70 (the base number) and 115:

Mouse	Keystrokes	Display
70	70	70
ENT	Enter	70.0000
115	115	115
G Δ%	F8 T	64.2857

Polar-Rectangular Coordinate Conversions



Polar Conversions - G ->P

Selecting G ->P converts the rectangular coordinate values in the X and Y registers (x, y) to polar coordinates (magnitude r, angle ϕ). Using the illustration above, convert (3,1):

Mouse	Keystrokes	Display	
1	1	1	
ENT	Enter	1.0000	
3	3	3	
G -> P	F8 [	3.1623	
X↔Y	V	18.4349	(angle in degrees)

Rectangular Conversions - F ->R

Selecting F ->R changes the polar coordinate values stored in the X and Y registers (magnitude r, angle ϕ) to rectangular coordinates (x, y).

Mouse	Keystrokes	Display	
18.4349	18.4349	18.4349	(degrees)
ENT	Enter	18.4349	
3.1623	3.1623	3.1623	
F -> R	F7 [	3.0000	
X↔Y	V	1.0000	

Probability

Permutation - F Py,x

Selecting F Py,x calculates the number of permutations of *y* taken *x* at a time. The following formula is used to calculate permutation:

$$P_{y,x} = \frac{y!}{(y-x)!}$$

Combination - G Cyx

Selecting G Cyx calculates the number of combinations of y taken x at a time. The following formula is used to calculate combinations:

$$C_{y,x} = \frac{y!}{x!\,(y-x)!}$$

To Execute a Permutation or Combination:

Note: All permutation and combination numbers must be non-negative integers.

1. Enter y.
2. Select Enter.
3. Enter x.
4. Select F Py,x or G Cyx.
   The result appears in the display, the stack drops, and y appears in the LAST X register.

Mouse	Keystrokes	Display	
5	5	5	
ENT	Enter	5.0000	
3	3	3	
F Py,x	F7 1	60.0000	Permutation

Mouse	Keystrokes	Display	
5	5	5	
ENT	Enter	5.0000	
3	3	3	
G Cyx	F8 1	10.0000	Combination

Statistics

Clearing the Statistics Registers - F Σ

Data registers R0-R5 are designated as statistics storage registers. Any values collected using the Σ+ key are placed in these registers in order to perform statistical analyses. To make sure there are no values remaining in the data registers from previous calculations, select the F Σ keys (that's the F7 and X keys on the keyboard). This also clears the stack registers.

Σ+

Selecting Σ+ computes statistics on the data in the X and Y registers, storing the results in the statistics storage registers R0-R5 as follows:

R0	The number of data points (pairs) accumulated. This value also appears in the display.
R1	The sum of the x values (Σx).
R2	The sum of squares of the x values (Σx^2).
R3	The sum of the y values (Σy).
R4	The sum of squares of the y values (Σy^2).

R5 The sum of the products of the x and y values (Σxy).

Selecting the Σ+ puts the number in the X register into the LAST X register, and the new value in R0 is placed in the X register.

Recalling Statistical Collections

Selecting RCL and the number of the data storage register recalls the value contained in that register to the displayed X register. If you want to recall both the R1 and R3 values (representing Σx and Σy statistics) select RCL Σ+ . This copies the value in R3 into the Y register, and the value in R1 into the displayed X register.

Correcting Mistakes

Select G Σ- to correct numbers that have been entered incorrectly.

Do the following to correct the data pair in the X and Y registers:

1. Enter the Y value of the incorrect data pair and select Enter to place it in the Y register.
2. Enter the X value of the incorrect data pair into the X register and select G Σ- (press F8-& on the keyboard).
3. Type the correct values for y and x (in this order) and select Σ+. You must delete and re-enter both values (x and y) even if only one of them is incorrect.

Example

The following data will be used in the subsequent discussion of the Scientific Calculator's statistical functions.

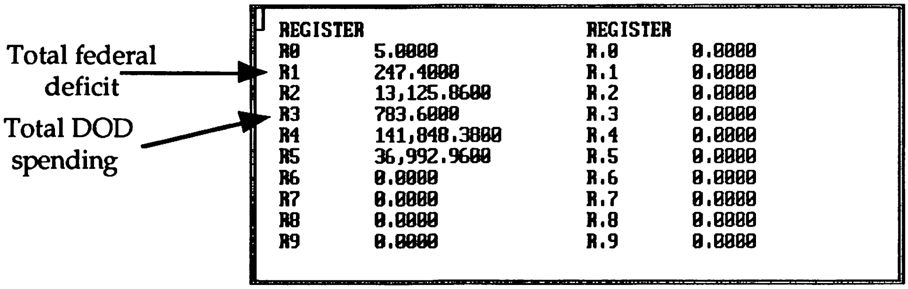
The US federal budget deficits and the US Department of Defense expenditures (in billions of dollars) for fiscal years 1976-1980 were the following:

Federal Budget Deficits		Department of Defense Spending	
1976	66.4	1976	57.9
1977	44.9	1977	110.6
1978	48.8	1978	207.8
1979	27.7	1979	195.4
1980	59.6	1980	211.9

The following example demonstrates how to accumulate a set of data points for statistical analysis using the previous federal budget and defense spending information. The Department of Defense data will be placed in the Y register and the Federal Budget Deficits in the X register.

Mouse	Keystrokes	Display	
F Σ	F7 X	0.00	Clears registers 0-5 and the stack.
57.9 ENT	57.9 Enter		First pair of data points.
66.4 Σ+	66.4 &	1.00	For fiscal year 1976.
110.6 ENT	110.6 Enter		Second pair of data points.
44.9 Σ+	44.9 &	2.00	For fiscal year 1977.
207.8 ENT	207.8 Enter		Third pair of data points.
48.8 Σ+	48.8 &	3.00	For fiscal year 1978.
195.4 ENT	195.4 Enter		Fourth pair of data points.
27.7 Σ+	27.7 &	4.00	For fiscal year 1979.
211.9 ENT	211.9 Enter		Fifth pair of data points.
59.6 Σ+	59.6 &	5.00	For fiscal year 1980.

The contents of the data registers after entering the previous data pairs follows:



```
REGISTER                       REGISTER
R0     5.0000                  R.0     0.0000
R1     247.4000                R.1     0.0000
R2     13,125.8600             R.2     0.0000
R3     783.6000                R.3     0.0000
R4     141,848.3800            R.4     0.0000
R5     36,992.9600             R.5     0.0000
R6     0.0000                  R.6     0.0000
R7     0.0000                  R.7     0.0000
R8     0.0000                  R.8     0.0000
R9     0.0000                  R.9     0.0000
```

Mean - G X

Selecting G X computes the arithmetic mean of the x and y statistics in the R1 and R3 registers. From the five year statistical data you collected and stored in the example above, calculate the mean deficit for the five years and the mean defense spending for the same time period.

Mouse	Keystrokes	Display	
G x	F8 0	49.4800	This is the mean deficit from 1976-1980.
X↔Y	V	156.7200	This is the mean defense spending for 1976-1980.

Standard Deviation - G s

Selecting G s computes the standard deviation of the accumulated statistics data according to the following formula:

$$Sx= \sqrt{\frac{n \Sigma x^2 - (\Sigma x)^2}{n(n-1)}}$$

$$Sy= \sqrt{\frac{n \Sigma y^2 - (\Sigma y)^2}{n(n-1)}}$$

The Scientific Calculator computes the standard deviation of the accumulated x values using the data that has been stored in the R0, R1, and R2 data registers and places the result in the X register. The standard deviation of the accumulated y values stored in R0, R3 and R4 is calculated and placed in the Y register. If you want to compute the exact value of the population standard deviation, add the mean of the data to the data (select G x, then Σ+, then G s).

Mouse	Keystrokes	Display	
G s	F8 keypad .	14.8703	This is the standard deviation of the yearly deficit from 1976-1980.
X↔Y	V	68.9974	This is the standard deviation of the defense expenditures for 1976-1980.

Linear Regression - F L.R.

After the data pairs have been collected in R0-R5, you can calculate the coefficients to the linear equation `y = Ax + B` using F L.R. The slope (A) is placed in the Y register and the "y" intercept (B) is placed in the X register.

Linear Estimation and Correlation Coefficient - F y,r

Selecting F y,r places the linear estimate in the X register and the correlation coefficient in the Y register. Linear regression and linear estimation are based upon the presumption that the interdependence of the x and y values approximate a straight line. Correlation coefficient is how closely the data "fits" a straight line. It ranges from -1 to +1, with +1 being a straight line with a positive slope and -1 a straight line with a negative slope.

Scientific Calculator Display Errors

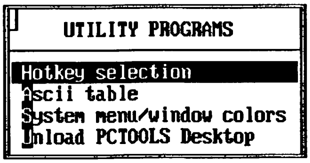
If you try performing a calculation containing an improper operation (for example, dividing by zero), the display will show the word "Error" along with a number. The Scientific Calculator displays Error 0, Error 1, or Error 2. Error 0 means you have entered an improper mathematical operation, for example, calculating the percent difference of zero. Error 1 means you have entered too many values into the Storage Registers and caused an overflow. Error 2 can be displayed if you enter an improper statistical operation. To clear the error message, press or click on any key.

Utilities

PC Tools Desktop includes special utility programs to modify various PC Tools Desktop settings. These settings include reassigning the Hotkeys, changing system colors (desktop colors, dialog box colors, etc.) and removing PC Tools Desktop from your computer's memory so it is no longer resident. You can also display an ASCII character table that includes IBM graphics characters.

Selecting a Utility

Once **Utilities** is chosen from the Desktop pull-down menu, the Utility menu is displayed. The illustration below shows you what you'll see when you choose **Utilities** from the Desktop menu:



Hotkey Selection

A hotkey is a specially designated key or key sequence used to activate a resident program or a resident function (like cut and paste functions or automatic dialing). Use a hotkey to open and close PC Tools Desktop or use the Clipboard from the DOS prompt or from any application when PC Tools Desktop is memory resident.

- Choose **Hotkey selection** from the Utility Programs menu.
  The Hotkey dialog box appears.

To Change the PC Tools Desktop Hotkey:

From the DOS prompt or from an application, you can open or exit PC Tools Desktop by pressing the same designated hotkey. The PC Tools Desktop default hotkey sequence is Ctrl - Spacebar, but you can change it to whatever you want.

Note: We recommend you use the Ctrl and Shift keys with the function keys F1-F10 for hotkey combinations.

1. Select **Desk Hotkey** in the dialog box.
2. Press whatever key combination you want to use as the hotkey.
   The new key combination appears in the dialog box.
3. Select **OK** to save the new hotkey.
   The dialog box closes and the new hotkey combination is saved.

Whenever you want to open or close PC Tools Desktop, press the new hotkey combination.

To Change Clipboard Paste Keys:

You can use the Clipboard paste function to insert the contents of the Clipboard into any DOS application or the DOS prompt. See the Clipboard chapter for how to use the Clipboard hotkey paste function. The paste default keys are Ctrl - Insert, but to change them perform the following procedure:

1. Select **Clipboard Paste** from the Hotkey dialog box.
2. Press the key combination you want to use for pasting.
   The new key combination appears in the dialog box.
3. Select **OK** to save the new hotkey.
   The dialog box closes and the new hotkey combination is saved.

Whenever you want to insert the contents of the Clipboard into an application or at the DOS prompt, use the new **Paste** key combination.

To Change Clipboard Cut Keys:

The Clipboard cut function is used to transfer selected information from the screen to the Clipboard. See the Clipboard chapter for how to use the Clipboard hotkey cut function. The cut default key combination is Ctrl - Delete, but to change it perform the following procedure:

1. Select **Clipboard Cut** from the Hotkey dialog box.
2. Press the key combination you want to use for copying.
   The new key combination appears in the dialog box.
3. Select **OK** to save your new hotkey.
   The dialog box closes and the new hotkey combination is saved.

Whenever you want to copy information from the screen, use the new key combination.

To Change Autodial Keys:

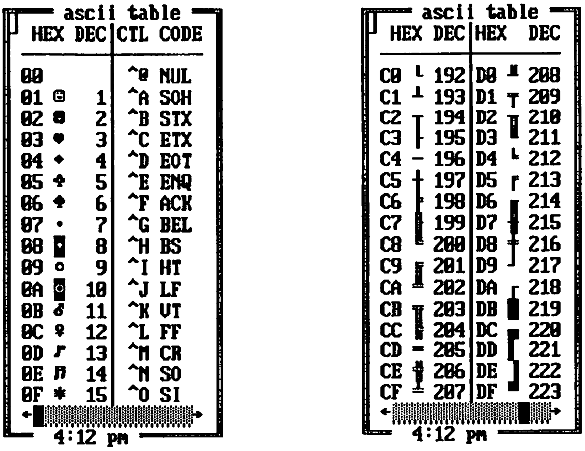
When Desktop is installed resident, you can activate the Autodialer to dial a phone number appearing on the screen. The Autodialer default key combination is Ctrl-O, but to change it perform the following procedure:

1. Select **Autodialer** from the Hotkey dialog box.
2. Press the key combination you want to use for dialing.
   The new key combination appears in the dialog box.
3. Select **OK** to save your new hotkey.
   The dialog box closes and the new hotkey combination is saved.

Whenever you want to automatically dial a phone number appearing on the screen, use the new key combination.

ASCII Table

The ASCII (American Standard Code for Information Interchange) table is a chart associating a number with a letter, number, punctuation mark, or control character.



```
      ascii table
 HEX DEC│CTL CODE
────────┼────────
00      │ ^@ NUL
01 ☺   1│ ^A SOH
02 ☻   2│ ^B STX
03 ♥   3│ ^C ETX
04 ♦   4│ ^D EOT
05 ♣   5│ ^E ENQ
06 ♠   6│ ^F ACK
07 •   7│ ^G BEL
08 ◘   8│ ^H BS
09 ○   9│ ^I HT
0A ◙  10│ ^J LF
0B ♂  11│ ^K VT
0C ♀  12│ ^L FF
0D ♪  13│ ^M CR
0E ♫  14│ ^N SO
0F ☼  15│ ^O SI
    4:12 pm
```

```
      ascii table
 HEX DEC│HEX  DEC
────────┼────────
C0 └ 192│D0 ╨ 208
C1 ┴ 193│D1 ╤ 209
C2 ┬ 194│D2 ╥ 210
C3 ├ 195│D3 ╙ 211
C4 ─ 196│D4 ╘ 212
C5 ┼ 197│D5 ╒ 213
C6 ╞ 198│D6 ╓ 214
C7 ╟ 199│D7 ╫ 215
C8 ╚ 200│D8 ╪ 216
C9 ╔ 201│D9 ┘ 217
CA ╩ 202│DA ┌ 218
CB ╦ 203│DB █ 219
CC ╠ 204│DC ▄ 220
CD ═ 205│DD ▌ 221
CE ╬ 206│DE ▐ 222
CF ╧ 207│DF ▀ 223
    4:12 pm
```

ASCII table with and without CTL code

The ASCII table shown above contains the following information:

Hex: represents the ASCII code for the character in hexadecimal equivalent.

The character: shows the character displayed when the ASCII code is entered.

Dec: represents the ASCII code for the character in decimal equivalent.

Ctl: represents the Ctrl (control) key combination to produce the character explained in the Code column. For example, pressing Ctrl - H means that character 8 is the same as BS (backspace).

Code: represents the interpretation of the ASCII character.

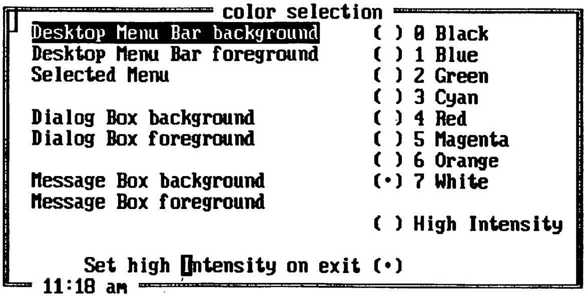
To Find a Character in the Table:

- Press any character key with the table displayed.
  The portion of the table showing the specified ASCII code is displayed. For example, if you press D, the table will display character number 68. If you want to find a control character, press Ctrl - A, for example, and the table displays character number 1.
  or
- Press the Up or Down arrow keys or the PgUp or PgDn keys to move through the symbols in the table.
  or
- Scroll through the table using the mouse in the scroll bar.

System Menu/Window Colors

You can change the colors of desktop menus, menu bars, dialog boxes and message boxes.

1. Choose **System menu/windows colors** from the Utility Programs menu.
   The Color Selection box is displayed with the default options selected.



```
                    color selection
 Desktop Menu Bar background      ( ) 0 Black
 Desktop Menu Bar foreground      ( ) 1 Blue
 Selected Menu                    ( ) 2 Green
                                  ( ) 3 Cyan
 Dialog Box background            ( ) 4 Red
 Dialog Box foreground            ( ) 5 Magenta
                                  ( ) 6 Orange
 Message Box background           (•) 7 White
 Message Box foreground

                                  ( ) High Intensity

      Set high Intensity on exit (•)
   11:10 am
```

2. Select any of the following options in the Systems color box:

   Desktop Menu Bar background: changes the background color of the Menu Bar.

Desktop Menu Bar foreground: changes the color of the commands on the Menu Bar.

Selected Menu: changes the color of the highlighted characters in the menus.

Dialog Box background: changes the background color of all dialog boxes.

Dialog Box foreground: changes the color of the information in all dialog boxes.

Message box background: changes the background color of all message boxes.

Message box foreground: changes the color of the message.

Set high Intensity on exit: turns the high intensity background controller on when when hotkeying out of Desktop on CGA and EGA monitors.

On color monitors which provide high intensity colors, you can have either high intensity background colors or blinking characters. Desktop uses high intensity background and sets blinking on exit. If you hotkey into Desktop on a CGA or EGA monitor from a program with high intensity background selected, you will have characters blinking on exit from Desktop. To correct this, select the Set high intensity on exit option. This option does not affect the colors in Desktop.

3. Select any of the color options you want.
4. Press Esc or close the dialog box to save your changes
   The Systems Colors box closes and the colors are changed and saved.

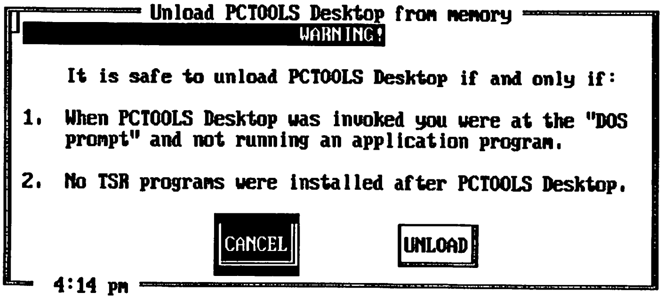
Unload PC Tools Desktop

If you no longer want to use any of the PC Tools Desktop applications or if you need more memory space for large programs or files, you need to unload PC Tools Desktop from the computer's memory. Unloading a program from memory does not remove it from the disk, it just removes the program from the computer's usable memory.

If you have loaded several memory resident applications, you need to unload them in the reverse order they were loaded.

Note: You cannot unload PC Tools Desktop from an application; you must be at a DOS prompt outside of PC Tools Desktop.

1. Choose **Unload PC Tools Desk from memory** from the Utility Programs menu.
   A warning message appears for you to confirm your decision.



```
Unload PCTOOLS Desktop from memory
WARNING!

It is safe to unload PCTOOLS Desktop if and only if:

1. When PCTOOLS Desktop was invoked you were at the "DOS
   prompt" and not running an application program.

2. No TSR programs were installed after PCTOOLS Desktop.

4:14 pm
```

2. Select one of the command buttons:

   Unload: removes PC Tools Desktop from the computer's memory.

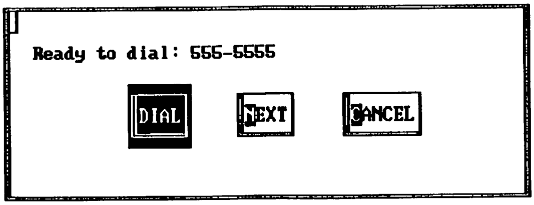
   Cancel: cancels the selection and returns you to where you were before choosing Unload from memory.

Note: You can also unload PC Tools Desktop from a DOS prompt by typing KILL.

Autodialer

You can automatically dial a phone number appearing on the screen when Desktop is installed resident. The phone number can be in any Desktop application, but also can be in a word processor document, a spreadsheet, entered at the DOS prompt, etc. You must have a Hayes compatible modem attached.

The Autodialer is activated with a hotkey, Ctrl-O, which you can change (see the Utilities application). Once you press the hotkey, a dialog box appears on the screen showing the phone number to be dialed along with three command buttons: DIAL, NEXT, and CANCEL.



Ready to dial: 555-5555

DIAL will dial the displayed number; NEXT will search for another number on the screen; CANCEL will cancel the autodialer. If there is no number on the screen to dial, you will hear a beep. Before using this function, however, you must make sure the phone number meets the number criteria below, and you must configure the Autodialer from the Databases application. (The instructions appear below and in the Databases chapter.)

Phone Number Criteria

When dialing a number on the screen , the Autodialer scans all numbers on the screen and recognizes 3 or more consecutive numbers as a valid telephone number. The Autodialer accepts spaces, dashes, parenthesis, hyphens, and "x" (for extensions) and will recognize the following characters when placed in a phone number:

P: used if you are have a rotary dial phone.

T: used if you have a Touch-Tone® phone.

, (comma): pauses two seconds before continuing to dial. If you want a longer pause, you can use more commas. This is useful if you have to dial 9, for example, to get a line outside a main switchboard.

*** or #:** accepted characters for phone numbers.

W: waits for a dial tone before proceeding. This is useful for dialing long distance access services that require you to wait for a tone before continuing to dial.

K: delays dialing until you press another key. Some on-line services answer the phone and return a tape-recorded request for more information before processing your transactions (such as automatic banking transactions). In such instances, you can use the K in your phone number.

@: waits for dial tone (no answer).

When you select a phone number with a K in it, the Autodial Pause dialog box appears with the following options:

Resume dialing: dials the remaining numbers in the phone string.

Cancel: cancels the dialing procedure and returns you to the current record.

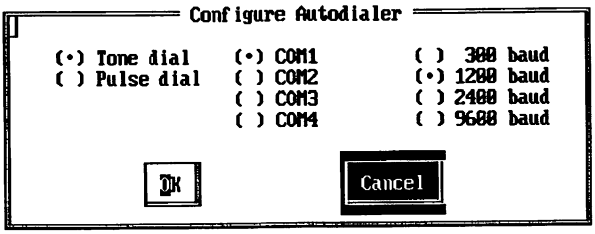
Configure Autodial

Before you can use the Autodialer, you need to set transmission parameters to connect your computer system and modem. Once these parameters have been set, you don't need to change them unless you change modems. You also need to be aware of what kind of phone system you are using, for example, whether you are using a pulse or tone dialing procedure and what kinds of delays and pauses you are likely to see.

Your modem should be configured so that Data Carrier Detect (DCD or CD) and Data Set Ready (DSR) reflect the actual state of the carrier detect and DSR signals. Some modem manufacturers refer to this state as "True carrier detect" and "True DSR."

Note: Do *not* use the setting "Carrier detect always on" or "DSR always on." Consult your modem owner's manual for information on configuring your modem.

1. Choose **Configure autodial** from the Controls menu in the database application.
   The Configure Autodialer dialog box appears for you to set or verify transmission settings.



```
Configure Autodialer

(•) Tone dial    (•) COM1     ( )  300 baud
( ) Pulse dial   ( ) COM2     (•) 1200 baud
                 ( ) COM3     ( ) 2400 baud
                 ( ) COM4     ( ) 9600 baud
```

2. To change the settings, select any of the following configuration options:

   Tone dial: sets the dialing procedure for touch-tone phones. Using the T character in a phone number over rides this option.

   Pulse dial: sets the dialing procedure for rotary dial phones. Using the P character in a phone number over rides this option.

   COM 1, 2, 3, 4: shows which serial port your modem is connected to. Since COM 3 and COM4 are not standard, they must be defined on the command line with a parameter: /C3 or /C4 = IRQ,Base port address (for example, /C3=4,3E8). Refer to your modem manual for the IRQ and Base port address. This parameter is not necessary on PS/2's.

   300 to 9600 baud: shows the speed at which the computer transmission takes place. Set the baud speed according to your modem's specifications.

3. Select **OK** to set the new transmission settings.
   The dialog box closes and the current record appears for you to dial the phone number.

Selecting **Cancel** closes the dialog box without changing any settings and returns you to the current record. The dialog box opens with this option selected, allowing you to verify the transmission parameters.

Appendix A

Memory Resident Programs

What Are They?

Memory resident, or terminate and stay resident, programs (TSRs) are small applications that remain ready to be called up at a moment's notice. These programs may be brought up over other active programs, such as Lotus 123, WordPerfect, etc. Some TSRs allow DOS command type functions, Copy, Delete, Format, just to name a few. PC Shell is an excellent example of this type of utility.

The Desktop TSR was written to help counteract paper clutter on a desk. Phone dialers, notepads, even calculators can pop-up over your spreadsheet for a quick call, note or calculation. Once you've used a desktop utility, its hard to imagine ever being without one.

TSRs can be very helpful in saving time. TSRs can also be a source of frustration, especially if you use more than one in your system. We have taken great pains to make both PC Shell and Desktop well behaved. These two products should have very little, if any, compatibility problems.

The next few sections of this Appendix will deal with how TSRs work, problems they may cause and what to do about them.

How Do TSRs Work?

TSRs were first developed by Microsoft with the Print command. Through Print, you could load different print jobs into the computer's memory and return to other tasks. The computer would busily print the jobs, while you created other documents. Other software manufactures thought if Print could do this, why not do it with other types of applications. So the TSR was born. Soon, you could jot down notes on what to bring home for dinner or figure your entertainment budget, all without ever leaving your spreadsheet.

In actuality, TSRs don't really allow you do more than one job at a time. They still use the same processor as other programs. The only difference is they suspend the main application while they do their work. This means even though Print was giving the illusion of doing more than one job, it really was suspending the current application for a few milliseconds, sending data to the printer and returning control to the current application. Usually it happened so fast it was hardly noticeable. This is similar to what most TSRs do. They suspend the main application, do their jobs and return to the same place you left off. Hopefully, all without a hitch!

The way a TSR loads into your system is generally through the AUTOEXEC.BAT file in the root directory of your bootable drive. By doing this, the memory-resident program is always ready to go when called upon. TSRs can also be loaded from the DOS command line. Once a TSR is loaded in memory, it stays in a section of memory until activated by a certain keyboard sequence (called a hotkey). With these hotkeys, the program comes alive, over your other programs. Some TSRs require a fairly large chuck of memory to be set aside to remain resident Unlike these, PC Shell requires a small kernel of memory to remain dormant. When activated, PC Shell and Desktop save part of your computer's memory to the hard disk before loading the rest of their code. This allows them to use all the memory they need while active and yet take almost no memory from your other non-resident programs.

Can They Cause Problems?

With the advent of TSRs came a whole new set of problems. Occasionally, they can cause the system to hang, or worse yet, lose data. To be fair though, all programs can do these things. When DOS was written it was never really intended to do the things it must for TSRs. Only through careful programming can TSRs be useful products. Unfortunately, standards for writing TSRs have not been universally adapted by the industry.

Most TSRs are incredibly handy and extremely well written, but by their very nature, they may conflict with certain applications or usually each other. When this happens, problems can follow.

What Can I do to Fix the Problem?

Generally, if you follow the manufacturer's instructions for installing the program, all works well. Sometimes though, problems will arise. Two of the most common TSR conflicts are

- Conflicts with other TSRs
- Conflicts with applications.

Conflict with Other TSRs

If a problem arises after installing a new TSR, chances are it is conflicting with another TSR already in the system. Some symptoms of this are

- Computer will not completely boot up (start).
- A TSR will not come up after the correct hotkeys are pressed.
- The system hangs when entering or exiting a TSR.

As with any problem, you will need to put on your detective hat and dig into the cause.

The installation manual for your software (especially TSRs) should inform you if the AUTOEXEC.BAT file was changed to accommodate the new program. If the file was changed, the placement for the new TSR may conflict with another existing TSR. The loading order is critical for some memory-resident programs. The steps you can follow to correct this problem are the following:

1. Load your AUTOEXEC.BAT file into a text editor, like Notepads, the Word Processor in PC Shell or Edlin. Don't worry, the AUTOEXEC.BAT is a text file and is easily read and edited.
2. Compare the file with the following suggested loading order guideline:
   - DOS internal commands (path, prompt, echo off, etc.)
   - DOS external commands (mode, print, keyb, etc.)
   - Mouse commands
   - print spoolers
   - Mirror
   - PC-Cache
   - PC Shell
   - PC Tools Desktop
   - Menu or shell programs (1DIRplus, Xtree, Direct Access, etc.)

   Note: In some cases, print spoolers need to be loaded before DOS print. If you still have difficulties, try reversing their loading order.
3. If changing the loading order doesn't help, then you will need to find out which programs are conflicting with each other. To do this, boot from a master DOS disk in drive A and move to drive C. This will clear out any memory-resident programs and allow you to start with a clean slate.
4. Start typing each line from your AUTOEXEC.BAT file, one line at a time. Don't forget to set the path statement. It should be one of the first lines in your file. After loading in a TSR, test it. If it works fine, go on to the next line. Through this process of addition and testing, you should find out which programs are conflicting.

5. The fix may be as simple as changing the loading order of the conflicting programs. It may also be that the programs are conflicting because they both use the same hotkey setup. If so, refer to the program's manual for changing the hotkey setup for better compatibility.

Conflict with Applications

If the TSR you are using will not pop up over your spreadsheet, word processor, etc., or will not correctly return you to these programs, the TSR may simply not be compatible with that particular program. Here are some common problems:

Graphics mode: Some programs are designed to run in graphics mode. If an application is running in graphics mode and the TSR does not support graphics, the screen may fill with garbage characters, or just refuse to come up at all. To solve this problem, see if the program can be run in text mode. If it can, and this is acceptable to you, then you can use your TSRs from inside your programs running in text mode.

EGA graphic cards can be another source of problems. A TSR cannot read the current video settings as many of the EGA's registers are write-only. This doesn't cause problems while running the TSR, but when the TSR tries to restore the video display to the state it was in before the TSR was activated, it doesn't have all the information it needs, so it makes a best-guess. Often it will guess correctly and the screen will be returned properly. Sometimes, especially if several different colors were used, the color may be wrong. The solution to this problem is to run your EGA graphics program in black and white mode, or to not use your TSR while it is running.

Memory: The other common problem with TSRs and applications is an error due to the lack of memory. Remember, TSRs do allocate a piece of memory to do their job. The more TSRs you use, the more memory you take away from other applications. Large databases and spreadsheets need almost all available memory to run. If you receive an error that indicates you do not have enough available memory to run the application, you may need to remove some of the TSRs in your AUTOEXEC.BAT file to free up enough memory to run a particular application.

Both PC Shell and Desktop use a virtual memory scheme to minimize memory usage when not active. When activated, they swap out allocated memory to files on the hard disk. This allows them to utilize large portions of system memory to perform their functions. When finished, they carefully restore the computer's memory information, leaving no trace of ever being activated. What all this means to you is PC Shell and Desktop only tie up a small amount of memory when inactive. Once activated, they both take full advantage of available system memory to perform their functions quickly and efficiently.

Hotkey Conflict: The same keystrokes the TSR is using to activate itself may also be used to perform a function in your underlying program. The best fix is to change the hotkey setup for the TSR. Both PC Shell and Desktop have this capability. If changing the hotkey setup is not available in the TSR you are using, then the application may have the ability to change its keystrokes.

Now What?

If all else fails, give the manufacturer's technical support group a call. They can generally help with loading order problems and the like. It is also important to software manufacturers to know which programs are causing conflicts, so they may be addressed in a later version, if possible.

This information was intended to answer some questions on TSRs and save you a phone call to technical support. At the very least, it may give you better ideas on where to look for a solution when problems arise.

Appendix B

Technical Support

Central Point Software is backed up by a technical support staff trained to provide you with fast, courteous service. If you need assistance beyond what the manual, Help feature, and README.TXT file can provide, please write or call us with the information listed in the Technical Support Checklist below.

Mail

Write to Central Point Software, Inc.
15220 NW Greenbrier Pkwy., Suite 200
Beaverton, OR 97006
Attn: Technical Support

FAX

You can also FAX the information about your problem.
Our FAX number : (503) 690-8083

Phone

(503) 690-8080.

Dial 1 then extension 5700 anytime after the automated attendant has answered; you do not need to listen for the message to be completed. Our business hours are 8-5 PST, Monday-Friday.

It would help if you called from a phone next to the computer you're having problems with. Your computer should be turned on and ready to go.

New Bulletin Board System

For the latest PC Tools Deluxe updates and new information, dial into our new BBS. The phone number is (503) 690-6650.

CPS Bulletin Board Script File

There is a script file for logging on to Central Point's BBS, - CPS_BBS.SCR, which can be used to access the BBS using PC Tools Desktop Telecommunications. The first time that you use the BBS you will need to log on manually (without the script file) to get your user name and password. After you have them, put them in the indicated positions in the script file. Then you can select the entry in PHONE.TEL to automatically sign on to our BBS and get the latest news from the company.

Technical Support Checklist

Before contacting Central Point Software for technical assistance, please try to recreate the problem to provide us with an exact sequence of events. If the problem reoccurs, contact us by mail, FAX, or phone with the following information:

☐ 1. Central Point Software product: the name, version #, and file* date of the application you are having difficulty with.

*For example, PCBACKUP.EXE 1-19-89 can be found by typing DIR on the program disk or using PC Shell's More File Info command.

☐ 2. System Information: valuable information about your computer system can be easily obtained by using PC Shell's System Info command on the Special pull-down menu. Please include this information, along with the computer brand and model, in your written correspondence or have it accessible when contacting us by phone.

☐ 3. Disk drives: the brand names, sizes, partition sizes and partitioning software.

☐ 4. Additional hardware: the brand names of additional hardware installed in your computer (particularly specialty video cards, expanded memory boards, turbo boards, etc.).

☐ 5. Resident programs: if you had memory resident programs loaded (other than PC Tools Deluxe applications) when the problem occurred, please provide a list of them and their version numbers. Also, please see the Memory Resident Programs appendix of this manual for useful information about memory resident programs.

☐ 6. AUTOEXEC.BAT and CONFIG.SYS contents: Type "TYPE C:\autoexec.bat" or "TYPE C:\config.sys". The contents of these files can also be viewed with PC Tools Desktop's Notepads.

☐ 7. Errors: Write down the exact wording of any error messages received from the Central Point Software product, DOS "CHKDSK," or any other application.

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Central Point Software INC
A MEMBER OF THE VIDEO TECHNOLOGY GROUP (503) 690-8090
15220 N.W. Greenbrier Parkway, #200 • Beaverton, OR 97006

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